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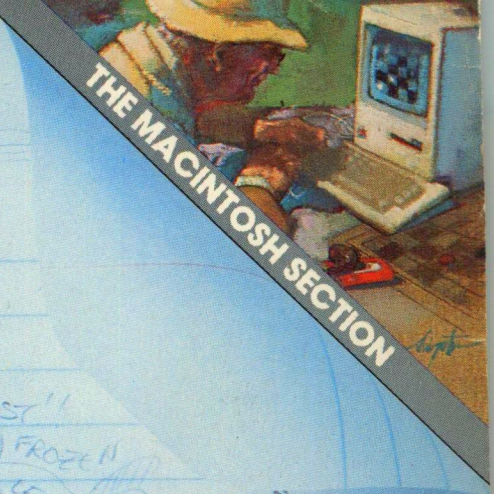
THE INDEPENDENT GUIDE FOR **APPLE** COMPUTING

SEPTEMBER 1984

VOLUME 2
ISSUE 9



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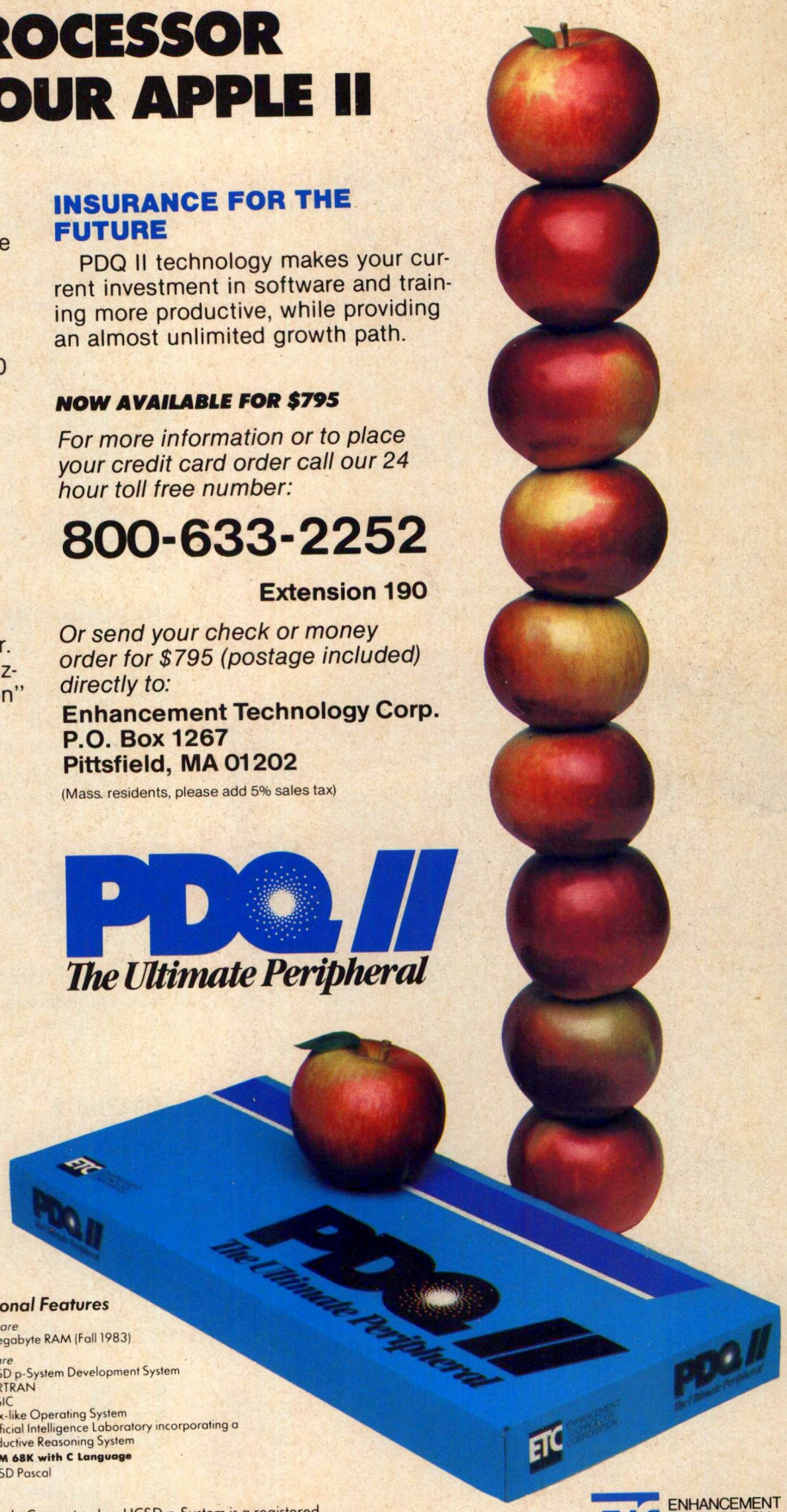

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VOLUME 2/ISSUE 9/SEPTEMBER 1984

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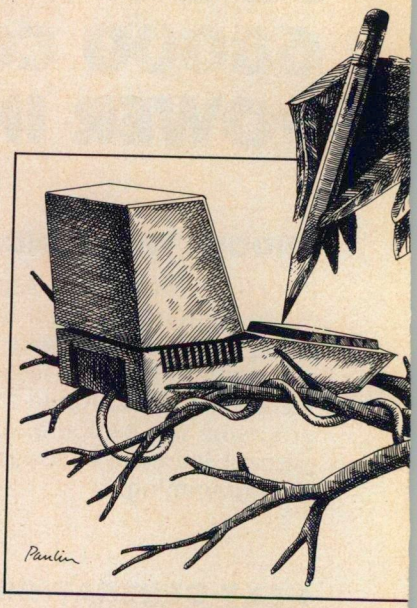

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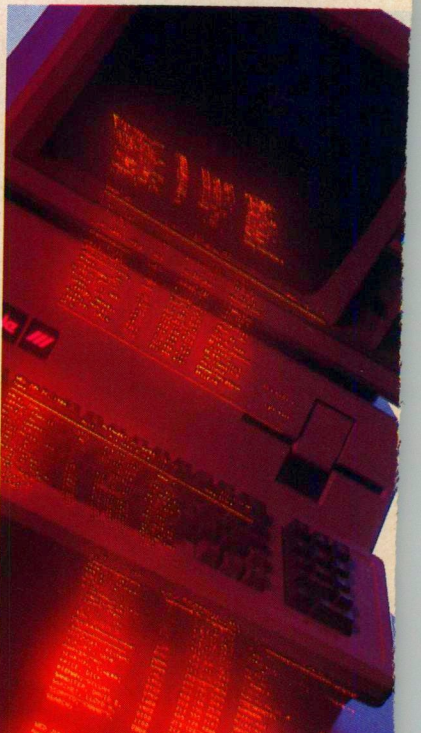

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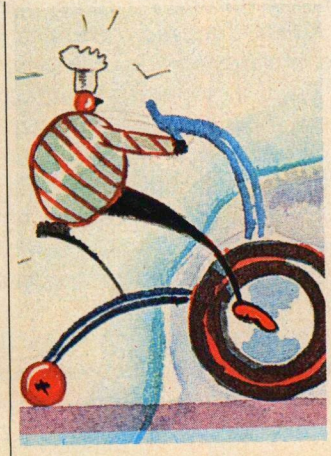

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Your inside source for developments and trends in the personal-computer industry

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The word is out on word processors. Format-II® ranked number one.

We've always thought of Format-II as the finest, easiest to use word processor for Apple® II+, IIe and Franklin® computers. We're pleased that Peelings II magazine agrees. They judged Format-II best out of 18 leading word processors. Here's why:

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PIE WRITER™	3
WRITE AWAY™	4
LETTER PERFECT 5™	5
WORDSTAR™	6
MEGAWRITER™	7
APPLE WRITER II™	8
PERFECT WRITER™	9
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Reviewed by John Martellaro, September 1983, based on Peelings II rating system for performance and performance to price ratio.

In the words of the Peelings II reviewer: *"This is the best program I have seen for people who do a lot of work with mailing lists, form letters and short correspondence."*

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CIRCLE 277 ON READER SERVICE CARD

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A+: The Independent Guide for Apple Computing ISSN (#0740-1590) is published for $24.97 one year, $43.97 two years, and $57.97 three years. Additional postage $12 for Canada, $12 other foreign by Ziff-Davis Publishing Co., One Park Ave., New York, NY 10016. Second-Class pending at New York, NY 10016 and at additional mailing offices. POSTMASTER: Send address changes to A+, P.O. Box 2965, Boulder, CO 80321. BPA membership (SMA Division) applied for October 1983.

Editorial Office: 11 Davis Drive, Belmont, CA 94002; Business Office: One Park Avenue, New York, NY 10016. Editorial (415) 594-2290, Advertising (212) 725-7947. For subscription inquiries and service, write to A+, P.O. Box 2965, Boulder, CO 80321.

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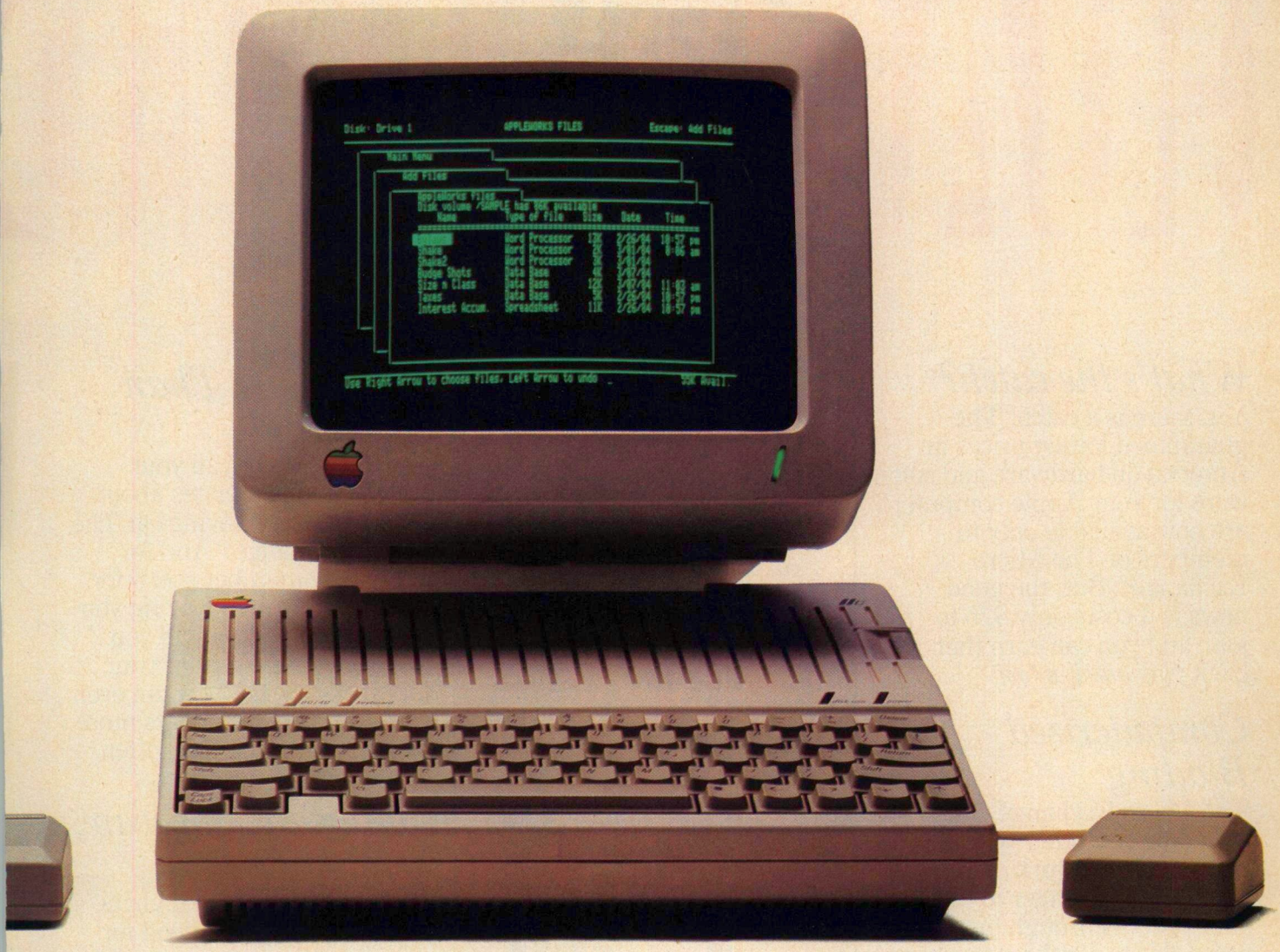

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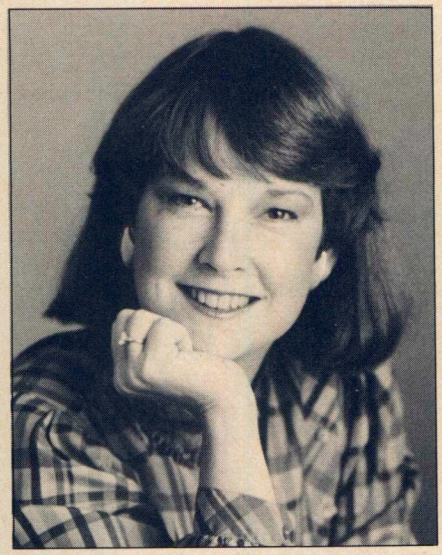
A MESSAGE FROM MAGGIE



As the days get shorter and we relegate vacation memories to the scrapbook, thoughts turn to new teachers, homework, sports, and all the other elements of going back to school. Starting school in September is a ritual we are all familiar with, which is why we picked this month to cover Apples in education.

As our special articles illustrate, education is not limited to classroom activities. From the minute we are so rudely brought into this world, the process of learning starts. Psychologists uniformly agree that the first five years of cognitive development are the most critical. In his article on education, Robert Sylwester, a renowned educational expert, discusses the stages of cognitive development in infants and toddlers, on up through high-school students (see page 34). Sylwester provides suggestions for software purchases that will encourage your childrens' cognitive development.

For some of us, education doesn't end when we hang the diploma on the wall. In my experience, the most successful people are those who continue to learn and apply their knowledge to plan and to solve problems in new ways. A good example of ongoing education is exploring and using computer technology to enhance a company's productivity and profits. Another aspect of continued learning is using computers to teach professional skills. In the last few years, utilization of computers to train professionals on the job has become more common, although not widespread. As you will see when you read Sue Crissman's article, "Training the Work Force" (page 26), personal computers are being used to train many different kinds of professionals, from engineers to business executives.

Not only is education important to your livelihood, but it also has recreational rewards. Say, for example, you've finally saved up enough money and vacation time to take that trip to France, but alas, the only French words you know are Moet Chandon. So, you decide to take the plunge and learn a second language. Your trusty Apple can help you with this project. Read Patty Winter's article on foreign-language programs (page 40), and with some diligence, you'll have the waiters thinking you're a native.

While you may be learning French on your home computer, an ever-increasing number of children and young adults are using computers in the classroom. The Apple II is the most popular microcomputer used in schools. In fact, to help drive that point home, Apple is sponsoring a contest called the "Apple $50,000 Scholarship Sweepstakes" that will run from August 24 to October 31. The sweepstakes grand prize is a $50,000 cash award that the winner may spend on the educational endeavor of his or her choice. In addition to the grand prize, there will be five first prizes of $5000 each, 25 second prizes of a complete Apple IIc system with software, and 975 third prizes of Apple School Packs (a day pack, visor, mug, and two T-shirts). The winners will be announced in November.

Apple hopes this contest will draw more attention to the use of Apples in education. To further this goal, Apple will donate a complete Appie IIe system to schools designated by the grand-prize winner and the winners of first and second prizes. To enter the contest drawing, you must be 12 years of age or older. Contest entries will be available at authorized Apple dealers.

Besides our emphasis on education this month, we are including Part II of our comprehensive monitor review. David Townsley and Francesca Venning-Townsley scrutinize seven low-cost monochrome monitors. The authors discuss how to shop for a quality monitor and provide a comparison chart of some of the more affordable monochrome monitors.

We also have a new column, Money Matters, by Ken Landis. In this column Ken will cover investing your hard-earned money in collectibles, tax shelters, real estate, home budgeting systems, and personal financial software, to name a few. He will also be discussing the capital markets—the stock, bond, and commodity markets. To quote Ken, "Just think of me as the Sylvia Porter of the computer set."

Our Macintosh section contains a review of two of the first game programs for the Mac and a look at a new data-management system, Omnis 2. On the Lisa front, we cover Lisa 7/7, Apple's newest integrated-software package, and review LisaProject, a graphic project-planning tool that is part of the Lisa 7/7 package.

Finally, I have a favor to ask. We are sponsoring a contest to see what software products you like the best. Next month's *A+* will include a Reader's Choice Awards questionnaire. Please fill it out and send it to:

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Maggie Canon

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LETTERS TO THE EDITOR

NEW MAC OWNER

Dear *A+*,

I have owned a Mac for all of one week. When I saw your magazine at UserFest, I subscribed on the spot. I especially enjoyed Thom Hogan's "The Scrapook and Clip Art" in the May 1984 issue. I hope he will write more articles.

Ron Cohen
Chicago, IL

ANSWER PRECEDES QUESTION

Dear *A+*,

Well, talk about a *fast* answer. There I was, groaning about lost characters on my new IIe with Apple Writer, and the answer was right there in Rescue Squad!

Thanks.

Bill DeBoard

See A+, June 1984, page 11.

MAILING-LIST OMISSION

Dear *A+*,

I have just finished reading "Four Ways to Manage Your Mailing List" (*A+*, June 1984), which I had rather expected would cover my own personal favorite, Bulk Mailer (Satori Software, 5507 Woodlawn Avenue North, Seattle, WA 98103).

I am one of the producers for a community light-opera group, and, owning the only computer (an Apple II Plus) among the four of us, undertook the organization and management of our mailing list, which accounts for about two-thirds of our ticket sales. I originally kept the list on a Cyber at our state university, which, of course, would sort the list 14 ways from Sunday in .0256 seconds, print labels in a thousand different formats, and never breathe hard. I used my Apple as a dumb terminal. Trouble was that toward the end of the semester I was often unable to dial up the damn machine (students, for some reason, come first at the institution), and then if I were lucky enough to get on, as often as not I had to sit there and wait for the cursor to come back while another of the 250 ports was serviced.

Then I saw an ad for Bulk Mailer, called the company, and asked about my application. I have a list that runs between 1600 and 2000 names. We purge it every year. Could Bulk Mailer do what I wanted, which was to give us a list of all the people on the list alphabetically and sort by ZIP code for labels? Sure could! I've been using it for a bit over two years now, and for a small group such as ours, it's great! (For larger uses, it also supports a hard disk.) I've had occasion to talk to the people at Satori for advice now and again and have invariably found them helpful; their product is continually updated.

I continue to enjoy *A+* and was especially taken with your June issue, some of which I will refer to in a class I teach at the university.

William C. Venman
Amherst, MA

MACINTOSH ERASERS

Dear *A+*,

In "A Love Letter to My Macintosh," *A+*, May 1984, page 93, Thom Hogan complained about not having multiple sizes of erasers on the Macintosh. Actually, he can get several sizes and shapes of erasers by using the brushes in the white color.

Clyde Wynia
Marshfield, WI

ELITE DISK DRIVES

Dear *A+*,

You have—in your May issue—my vote for the best single issue of a magazine for the Apple computer. It contains many excellent and informative articles.

I agree with the evaluation of the very fine Rana Elite disk drives. The first one I bought was an Elite III, and, having excellent support from the company, I have subsequently bought a second one. It is great to have almost two-thirds of a megabyte on one diskette. You can load all sorts of utilities onto your diskette and still have lots of room for WordStar, etc., which is something I had a problem with on a 16-sector diskette.

Besides having the potential to control four drives with a controller card, it also automatically detects whether the DOS is 3.2 or 3.3.

We will see more fantastic things from this company!

Herschel U. Martin, M.D.
Dalton, GA

ANIMATED PHONE

Dear *A+*,

In the April 1984 issue of *A+*, a press release we had sent you for our Animated Arithmetic product contained the wrong phone number for customer inquiries.

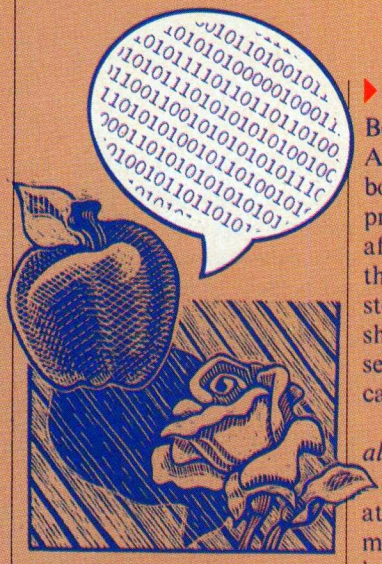
We have relocated to Dallas, Texas, and the correct number is (214) 255-9141.

Janet Iveson
President, PMI, Inc.
Dallas, TX

CORRECTIONS

On pages 38 and 39 of our July issue (Volume 2, Issue 7), the Cursor Controllers Chart contained several errors regarding Interfirm System's Digit Ball. The Digit Ball is a digital device that does require a special card, except on the IIc, Macintosh, and Lisa. In the accompanying photograph, the joystick identified as T.G. Product's is from Wico, and that identified as Wico's is from Kraft.

On page 44 of the July issue, the price for Apple Computer, Inc.'s AppleWorks was incorrectly listed. The correct price is $250.



APPLE KEEPS TALKING TO IBM

Apple Computer has introduced data-communications software for the Apple III that permits the III to communicate with all mainframes, minicomputers, and personal computers that support IBM 3270 protocols.

The Apple Access 3270 works with either an Apple Cluster Controller or an Appleline coaxial attachment to emulate an IBM 3278 Model 2 terminal. The software's capabilities include text-file transfer, on-line data entry, inquiry and response, electronic mail, and remote-data access.

Other program features include support of data-transmission rates from 110 to 9600 bits per second; customized help screens; a command file with auto-dial, auto-log on, and unattended operation abilities; and the ability to filter control characters to or from the host computer.

The product is available from Apple or an authorized dealer for $150.

ALL BOOKED UP

Book after book after book. After book after book after book after book. That's probably the feeling you get after browsing your way through your local computer store's seemingly endless shelves, especially if you're searching for specific applications for your Apple.

One new book, the *Annual Bibliography of Computer-Oriented Books*, attempts to chew that informational cud for you. Now in its 17th edition, this book digests the more than 1200 computer books from 173 publishers and organizes them into 86 categories, cataloged by type and style of presentation.

Categories include business uses of computers, advanced programming, introductory texts on languages, system design, decision support, and many more. If you think 86 categories is too many, munch on the fact that the publisher, the University of Colorado Press, excluded all introductory books published prior to 1980 and omitted other books it felt were "inadequate."

You can get your own copy of this toothsome tome by sending $4 (or $6 if they have to bill you) to "Computing Newsletter," Box 7345, Colorado Springs, CO 80933.

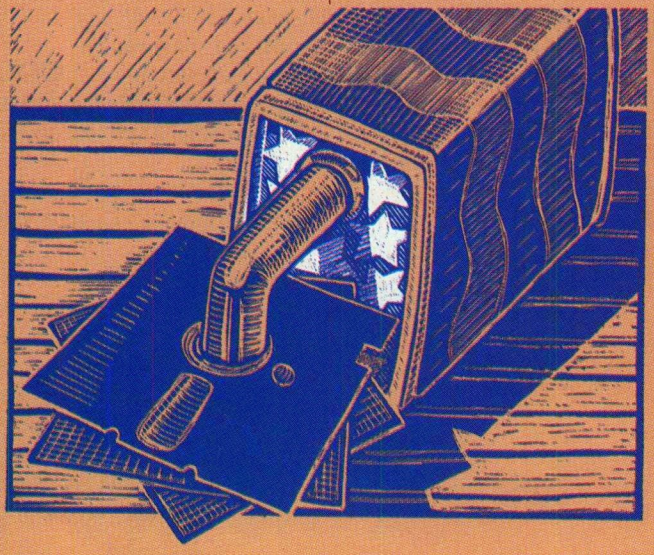
SOFTWARE PIRATES WASHED UP

There's more than one way to snag a software thief, and H & H Scientific hopes its method will really work.

H & H created the Stock Option Analysis Program (SOAP) for the Apple IIe and the IBM Personal Computer. To utilize SOAP's features fully, users need to tie in to the Dow Jones News/Retrieval service.

Fine, says H & H, but for users to hook into the Dow Jones service, they must return the original program disk to the company, in Fort Washington, Maryland. There H & H will encrypt your Dow Jones password directly onto the disk—any copies of the disk will carry your Dow Jones password for all to see.

Says H & H President Hersch Piloff, "In effect, the user's password is held hostage (by the user) to guarantee the security of his personal program. We think very few purchasers will be willing to give a copy of a program containing their password to a friend and thus risk incurring even modest usage charges."



COULD MICRO-COMPUTERS EXPORT MACRO-WARFARE?

Your Apple II Plus computer is a critical part of our nation's military strategy, according to the Department of Defense.

Because the II Plus and the 256K portable computer from GRiD Systems play key roles in NATO's European battlefield plans, in analyzing strategy and aiding troop-management decisions, the DOD wants to add certain unspecified commercially available Apple-compatible software to its list of controlled high-tech exports.

The Senate Permanent Subcommitttee on Investigations recently heard that "the commercial software is vital to solving a lot of our problems, but we still will need to reconfigure that software to be sensitive to military problems," according to Dr. Stephen Bryen, deputy assistant secretary of defense for international

economic, trade, and security policy.

"It is partially commercial, but with a Defense add-on, we find that the layman is no longer a layman, and our adversaries would be able to figure it out if it is readily available," said Bryen.

At this writing, the U.S. is still negotiating within the Coordinating Committee for Multilateral Export Controls (Cocom) on the question of limiting microcomputer and software sales to the Soviet Union.

Said Richard Perle, assistant secretary of defense for policy, "Some people believe that because these machines are widely available on the open market, we shouldn't try to control the Soviet acquisition . . . We know we cannot put a hermetic seal around the Soviet Union, but we don't want them to be able to import them by the thousands."

TECHNI-CARE

Put away those cans of food for the hungry in Central America and start saving your nonperishable software. A newly formed organization of technically oriented professionals is looking for programmers, analysts, economists, statisticians, foresters, and others to offer brain power, not buying power, to the nation of Nicaragua.

Appropriately named tecNICA, the group plans to organize its high-tech volunteers into project teams to help Nicaraguans solve computer problems in banking, agriculture, education, health, and other areas.

Economist Michael Urmann, a tecNICA founder, said that project group members would become familiar beforehand with the software, hardware, and personnel involved at each project site. Consulting trips to Nicaragua will be scheduled regularly, depending on the demand and tecNICA's resources.

Urmann said tecNICA members had already conducted a well-received database workshop in Nicaragua, primarily for workers at the country's Banco Central. "Until six months ago," he said, "they didn't know much about off-the-shelf programs. They'd never seen the catalogs [of software]." He told the story of a programmer who spent six months writing a payroll program for his Apple that he could have purchased ready-made for $250.

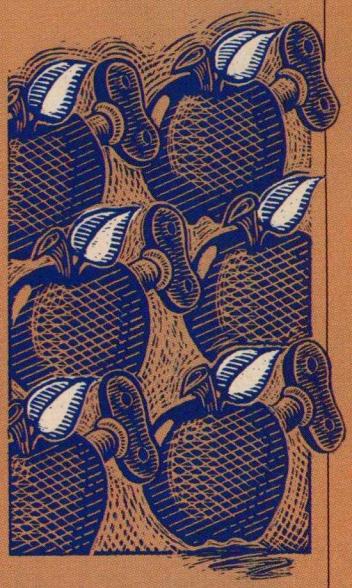
In addition to computer consultants, tecNICA is also looking for mini- and microcomputer software for databases, spreadsheets, statistics, communications, portfolio analysis, and simulation models. For further information write Michael Urmann, 110 Brookside Drive, Berkeley, CA 94705.

CRUSHING THE COUNTERFEIT APPLE

The International Trade Commission recently forbade the import of Apple II and IIe lookalikes, unless the importers post a 200% duty on the value of the product.

Apple Computer, Inc., had originally charged 15 foreign-based companies with infringing on its patents and software copyrights. The ITC not only agreed, but also expanded the ban to imports "that have motherboards substantially similar to the Apple motherboards."

Within the United States, four men and three companies recently pleaded guilty to felony and misdemeanor charges involving counterfeit Apples. Gary Hecker, a patent and copyright attorney for Apple, lauded the case, saying that "this is the first case with a clear message that piracy is illegal and can result in a jail term." +



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	Retail Price	Your Price
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T-Maker (Integrated Software Package)	250.00	205.95
Artsci		
Magic Window II (80 Column)	149.95	104.95
Magicalc	149.95	104.95
Magic Office System	295.00	220.00
Ashton-Tate		
dBase III	695.00	520.00
Framework	695.00	520.00
Beagle Brothers		
Apple Mechanic	29.95	20.95
GPLE	49.95	39.95
Disk Quick	29.95	21.95
Silicon Salad	29.95	21.95
Fat Cat	34.95	24.95
BPI Systems, Inc.		
Job Costing	595.00	446.95
General Accounting	395.00	309.95
Accounts Payable	395.00	309.95
Accounts Receivable	395.00	309.95
Inventory Control	395.00	309.95
Payroll	395.00	309.95
Broderbund		
Bank Street Writer	69.96	49.95
Bank Street Speller	69.95	49.95
Business Solutions		
Incredible Jack	179.00	134.95
Jack Report	99.00	74.95
Central Point Software		
Copy II +	39.95	31.95
Datatransform		
Fontrix	75.00	64.95
Font Disk #1	24.95	18.95
Font Disk #2	24.95	18.95
Font Disk #3	24.95	18.95
Font Disk #4	24.95	18.95
MicroPro		
Wordstar w/Starcard	495.00	395.00
Wordstar Professional w/Starcard	694.95	486.95
Microsoft		
Multiplan (Apple DOS)	195.00	150.00
T.A.S.C.(Applesoft compiler)	195.95	146.95
Micro-Sparc, Inc.		
Ampersoft	49.95	39.95
G.A.L.E.! (Global Applesoft Line Editor)	49.95	39.95
Macrosoft	69.95	55.95
The Assembler	69.95	55.95
Key Perfect	29.95	23.95
Penguin Software		
Complete Graphics System	79.95	59.95
The Graphics Magician	59.95	42.95
Paper Graphics	49.95	37.95
Transitions	49.95	37.95
Map Pac	19.95	15.95
Phoenix Software		
Zoom Grafix	49.95	35.95
Sensible Software		
Back-it-Up III	74.95	59.95
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The Handlers	159.95	84.95
Southwestern Data Systems		
Merlin	64.95	45.95
Printographer	49.95	34.95
Stoneware		
D.B. Master (V4.0)	350.00	262.50
D.B. Master Utility Pak 1	129.95	97.50
D.B. Master Utility Pak 2	129.95	97.50
D.B. Master Stat Pak	129.95	97.50
United Software		
ASCII Express Professional	129.95	103.95

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	Retail Price	Your Price
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Blue Chip Software		
Millionaire	59.95	47.95
Broderbund		
Lode Runner	34.95	24.95
Spare Change	34.95	24.95
CBS Software		
Match Wits	29.95	21.95
Goren's Learning Bridge	79.95	55.95
Epyx		
Oil Barons	59.95	48.00
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Sublogic		
Flight Simulator II	49.95	39.95
Night Mission: Pinball	39.95	31.95

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Game Show	39.95	31.95
Wizard of Words	39.95	31.95
BrainBank		
The Human Body: An Overview	89.95	72.00
The Skeletal System	70.00	56.00
Conduit		
Algebra Drill I	140.00	112.00
Trigonometry	90.00	72.00
Counter Point		
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Music	29.95	23.95
J & S Software		
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Biology Test Maker	75.00	60.00
Apple Grade Book	39.95	31.95
P.D.I.		
Step by Step 1 (Applesoft Tutorial)	79.95	59.95
Scarborough		
Master Type	39.95	31.95
Terrapin		
Terrapin Logo	99.95	79.95
The Learning Company		
Rocky's Boots	49.95	39.95
Reader Rabbit	39.95	31.95

APPLE HARDWARE

	Retail Price	Your Price
Advanced Logic Systems		
Z Card II	169.95	125.00
Apricorn		
Serial Interface Card	99.95	80.95
Hayes Products		
Joystick Mach III (IIe)/II +	59.95	43.95
Kensington Microwave		
System Saver	89.95	64.95
Koala Technologies		
Koala Pad	124.95	84.95
Prometheus		
Promodem 1200	495.00	395.00
Sweet Micro		
Mockingboard - Sound	129.95	104.95
Mockingboard - Sound & Speech	195.00	155.00
TG Products		
Joystick	59.95	41.95
Paddle	39.95	27.95
Select-a-Port	59.95	41.95

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Diskettes DSDD	65.00	35.00
Verbatim		
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5-1/4" Datalife - Soft Sector (ds/dd)	65.00	40.00
Ribbons		
Star Gemini/Okidata		4.95

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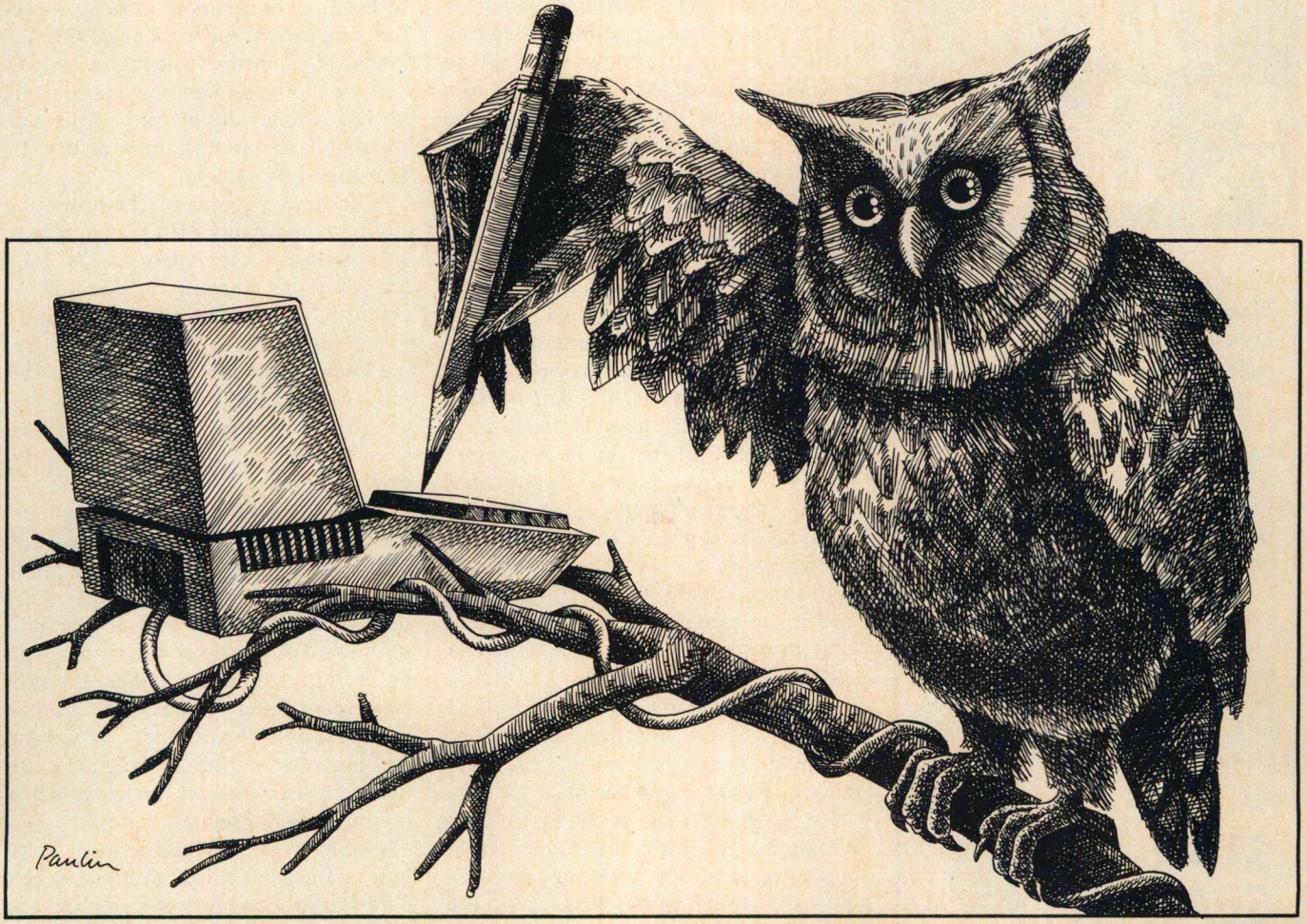


PEDAGOGICAL PROGRAMMING

Computers and education may be natural partners, but it takes a skilled hand to make the best of the match. Writing educational software for the Apple is easy—but writing *good* instructional software takes more effort.

From Apple's earliest days, the Apple family of computers has been the favorite in schools. The number of Apple IIs in this country's classrooms is now well past 100,000. Most of the nearly one million other Apple owners have also tried their luck with one or more educational packages.

Partly as a cause and partly as a consequence, you can now find thousands of educational programs for the Apple. *Swift's Educational Software Directory Apple II Edition*, for example, runs to more than 400 pages, with an average of several dozen programs per page.

If you're out to pick some educational software and definitely if you're thinking of writing your own, you should put some thought into what goes into good instructional software. Education may not be as clear-cut a science as chemistry, for instance, but it does have a large body of accumulated knowledge. Good computer-aided instruction (CAI) is based on some expertise about computers and an even better familiarity with learning.

Computers and education may be natural partners, but it takes a skilled hand to make the best of the match.

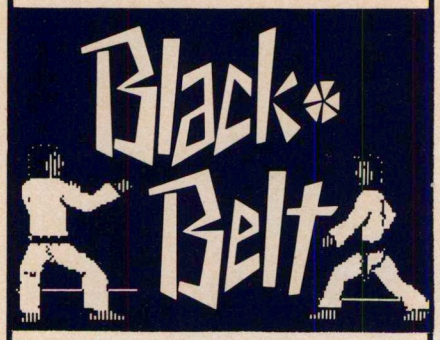
Actually, CAI systems were available long before the advent of personal computers. Some experimental systems were written for early mainframe computers, but the spread of timesharing systems (where several people share the use of a single computer) and minicomputers made instructional use of computers an economic possibility.

The largest of these mainframe-based systems was the PLATO network, created by the Control Data Corporation in association with the University of Illinois. The PLATO system is still running today, with more than a dozen mainframes across the country, and hundreds of terminals.

One of PLATO's distinctive features (and one of its biggest economic constraints) has been its use of special high-resolution display terminals. Mainframe-course designers learned

DOUG PAULIN

EARTHWARE
PRESENTS



Programming by Kevin Ryan

Black Belt is a challenging arcade game of the martial art, taekwondo. The Mockingboard sound and speech synthesizer, joystick and keyboard combine for both fun and learning. Championship sparring rules and the disk's practice section teach you the forms. Designed with input from professionals, **Black Belt** is a skill game in which brutality and rule infractions affect score.

The one-person game has a built-in artificial I.Q. rather than random generator. Instruction booklet included. Apple][computer, 48K, one disk drive, and joystick required. Mockingboard is optional, but adds exciting dimension. Suitable for ages 9-90.

$29.95.

STAR SEARCH

Pluto star base receives a signal from the direction of Epsilon Eridani (about 10 light years away). The players have their mission — find the origin of the signal. As captain, you must each choose a crew and supplies for your ship. Gather information by flying probes, with your automated telescopes, or by landing a pinnace. You may find alien life forms!

Go into the asteroid belt to conserve fuel but be ready to dodge meteoroids or destroy them with your laser gun. Each game is different and can be saved for re-entry. Win by managing your resources well and making discoveries.

Request educational version on school letterhead. Requires Apple][, 48K.

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CIRCLE 370 ON READER SERVICE CARD

early on that pictures and text were far more effective than text alone. The PLATO project led to more insights, particularly since the program funded many studies of what elements contributed to successful computerized instruction.

Current CAI efforts also draw on the experience of programmed-instruction-book projects, popular especially in the middle and late 50s. In these books, as in CAI, the material is broken into frames, and as you finish most frames, you are asked a question.

At critical points, you pick from a list of answers, each of which directs you to continue working on a different page. Depending on whether the answer you pick is correct or not, the page leads to more advanced material, remedial instruction, or clarification.

Another ancestor of computerized instruction is the humble flash card. Automated flash cards, in fact, were one of the earlier popular applications of CAI. Even in BASIC, a language not particularly intended for instructional presentation, it was easy to write a program that would pose a series of arithmetic problems and check for the correct responses.

Micros Learn Two Lessons

The earliest microcomputer CAI programs were quite limited. Because the first micros had no graphics and only tiny amounts of memory, the pioneer generation of micro-based CAI programs was little more than automated page turners. The program displayed a screen full of text, asked the student to enter a constant character, and then showed the next screen.

Two developments have radically changed the nature of microcomputer-based CAI systems. One was the emergence of the Apple II and other personal computers with color graphics and affordable disk storage. The other was the widespread availability of authoring systems.

Apple graphics are still no match for PLATO's plasma-display terminals, but for most purposes they're good enough—and a complete Apple system costs far less than a PLATO terminal alone. With graphics, educational programs can offer clarity as well as entertainment value and still be affordable.

Disk-based systems have made it possible for individual Apple owners, schools, and small companies to develop and distribute software efficiently. Compared to paper-tape and cassette-tape-based systems, computers with floppy disks have greatly accelerated the process of developing, testing, and debugging all kinds of software.

Authoring systems have made computers such as the Apple accessible tools for instruction. These programming systems let lesson authors define their scripts in instructional terms, rather than in the more intricate structure of a general-purpose programming language. Someone who has a body of material to teach can now concentrate on educational design rather than on the details of programming in BASIC or assembly language.

The most popular of the authoring systems is probably PILOT, a language that first came to Apple as Dr. John Starkwether's version for the CP/M operating system. Apple brought an improved version of PILOT over to Apple DOS and later expanded it further into SuperPILOT. Other software developers have created their own versions of PILOT.

Play to Learn

While some Apple programmers were busy learning PILOT or writing skills-teaching programs in assembly language, another group put its energy into games. Although you may be hard put to find much direct educational value in many computer games, the process of writing games has trained thousands of programmers in writing fast graphics routines, pacing action to maintain user interest, and organizing presentations of related material.

Seeing what can be done in computer games has raised to higher levels both the expectations of users and the abilities of programmers. After spending an hour playing games that are lavishly illustrated, responsive, and even animated, most of us insist on this liveliness in instructional materials as well. Games have been particularly influential in the growing sophistication of simulation software. In this type of program, the computer reports a current situation to you and asks for your response.

Based on your input, the program displays the resulting state of affairs and asks what to do next.

That the accumulated experience from industrial training is strongly reflected in much current CAI software is almost entirely due to one institution—Bell Laboratories. In the halcyon years before the breakup of the Bell System, the Labs and Bell's Western Electric manufacturing arm did trailblazing work on what is now known as human-factors engineering. Most of this work was freely published and

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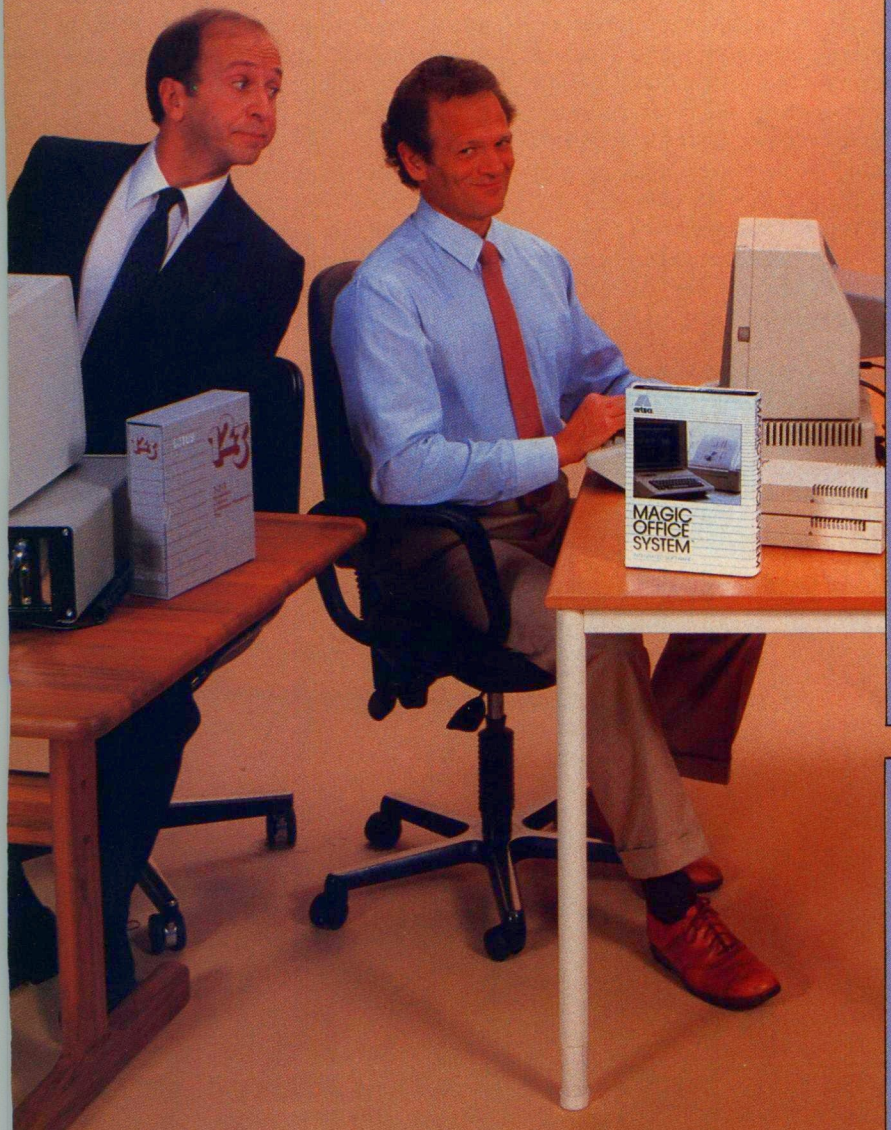

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widely read. Whether you wanted to know what colors made the most readable screen or how long it took to sharpen a pencil, one of the Bell Laboratories people had probably written it up.

In any case, industry in general is now one of the largest users of CAI services. Corporate training expenses are, according to some statistics, even larger than the cost of public education. Thus, an increasing amount of CAI packages is aimed at commercial firms instead of schools.

Industrial CAI users get a kind of feedback that schools do not. If you learn your algebra from a CAI system, the amount you retain in a year or two probably won't matter much unless you become a mathematician. In industry, however, you're likely to need the job skills that you learn with a computerized system for many years.

Until recently, corporate computer-based instruction was devoted almost exclusively to instruction about techniques and procedures, but just as many corporations now pay at least partial tuition for any academic training for employees, a growing number of corporations are making general CAI courses available to the people who work for them.

Theory and Practice

If industry has contributed an extensive body of knowledge about norms and human capabilities, educational theory has come primarily from universities. Most computerized instruction is based either implicitly or explicitly on academic theories of how people learn.

The general class of learning theories behind most CAI software involves response-reinforcement models. These hold that if students get confirmation or praise for correct answers—even from a computer—they will attempt to produce more right answers. Exactly what internal dynamics lead to this response is still a matter of hot debate, but getting answers right is in itself a powerful motivator for CAI users.

Academicians are still the most frequent authors of CAI material. Unfortunately, being a subject-matter expert does not automatically make a person an expert in CAI instructional design. Just as many brilliant researchers are soporific instructors, CAI material that is outstanding in content may or may not be a delight to work with.

Lessons Worth Learning

Out of all these antecedents and the rapidly-growing base of CAI experience, some pointers seem to be emerging. What makes for good CAI software depends in part on the audience and the subject, but we can identify several broad principles.

In general, the best CAI software takes into account the nature of both humans and computers. Good software is highly interactive, suitably paced, graphic, and tightly organized. When the purpose is the reinforcement of simple skills, reasonable periods of repetitive drill and practice are appropriate. Otherwise, software should vary the presentation to hold student interest.

Just as good computer programs reflect a clear structure and an explicit algorithm, good CAI has clear objectives and a defined strategy for getting them accomplished. Every frame in a CAI program should have a purpose.

Entertainment value can enhance most presentations, but it has to be kept in perspective. Continued success at a reasonable challenge is a better long-term motivator than an occasional laugh.

Although simulation and drill can be beneficial, experiential knowledge is not completely programmable. Computers and learning do go together, but there's a whole world beyond the screen. ✚

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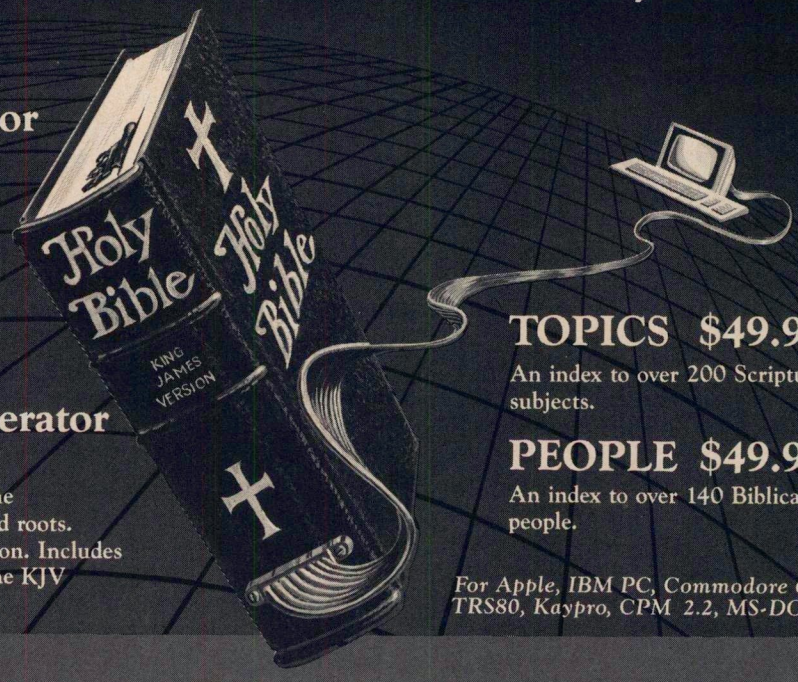

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Some people think we're a little crazy to go to all that trouble. After all, do you really need a diskette that can make one read/write

oduces thing to bout.

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EDUCATION

▸ APPLEWORDS BY STEVE ROSENTHAL

A short glossary

AUTHORING SYSTEM
A programming system designed to help users create computer-aided instruction (CAI) lessons. The more sophisticated systems are attempts to let users who know nothing about computers use their expertise about a subject area to create good computerized lessons. Most personal-computer authoring systems, such as the authoring mode in Apple Logo, do require some expertise in instructional design and computers.

AV
An abbreviation of *audiovisual*—teaching and presentation aids that project images or produce sounds. Originally, the term applied mostly to filmstrips, slides, overhead slides, and films, plus records and tapes. Now, it includes videotape and other electronic displays as well.

CAI
An abbreviation of either *computer-assisted instruction* or *computer-aided instruction*—the use of computers to present lesson material to students. See *computer-assisted instruction* for more details.

CAL
An abbreviation of *computer-assisted learning*—a method of using the computer for instruction that leaves the student in charge.

CBT
An abbreviation of *computer-based training*—an educational strategy in which computerized instruction is the main component of the teaching process. See *computer-based training* for more details.

CMI
An abbreviation of *computer-managed instruction*—a system in which the computer presents lessons, keeps track of student progress, and selects the sequence and pace of materials. See *computer-managed instruction* for details.

COMPUTER-AIDED INSTRUCTION (CAI)
The use of computerized systems to present lesson material or to quiz students on their progress.

Generally, the computer presents sections of material and asks the student to answer questions. Based on the responses, the system presents further material, covers the preceding material again, presents related material, or reviews past lessons.

COMPUTER-ASSISTED INSTRUCTION (CAI)
Most people use this term as a synonym for *computer-aided instruction*, but others reserve it for situations in which the computer plays a less prominent role and a human teacher a greater one.

COMPUTER-BASED TRAINING (CBT)
An instructional method that uses the computer as the principal teaching agent. Most people apply this term to development of industrial and commercial skills and not to general education.

COMPUTER-MANAGED INSTRUCTION (CMI)
A system in which the computer not only presents the material but also monitors student progress and selects further lesson material accordingly. CMI systems usually offer extensive testing and record-keeping facilities.

COURSEWARE
Originally the term referred to software that contained actual lesson material for computerized instructional systems. Now, the term is often used more generically, denoting any educational computer software, possibly including AV materials, or even any lesson material in either electronic or printed form.

DRILL AND PRACTICE
An educational approach that has the student work through many instances of the same type of problem. Computers are particularly good at presenting this type of lesson because they don't ever get bored, lose patience, or forget or miscalculate the answer. If the expected answers involve concepts that can be phrased in various ways, the software must be advanced enough to recognize alternate formulations, or users will become alienated.

FRAME
In computerized instruction, usually taken as the material shown at one time on screen. But with greater use of animation and interactive screens, the term is also used to mean a logical sequence of images treated as a unit in the instructional design.

INSTRUCTIONAL DESIGNER
A person who figures out how a body of material can best be presented to students. Designers often work with a subject-matter expert (SME) and a graphic artist to develop lessons and illustrations that make the material interesting, understandable, and correctly paced.

INTERACTIVE VIDEO
In computerized instruction, the linking of a videodisc or videotape player to a computer, allowing parts of the video program to be shown under computer control. Several companies make interface boards to connect video systems and Apple II-series computers. Apple SuperPILOT includes commands for controlling video players, making it easy to integrate video segments into a lesson.

LOG
As applied to computerized instruction, a record of student responses to lesson material (and, as a verb, to create the record). A logging facility can help a lesson author spot which sections are giving students trouble and need improvement, or it can help a teacher spot problems a student may be having that the computer cannot help with. Several of the more advanced

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instructional systems for the Apple offer logging capability.

LOGO

A computer language created to help children learn how to use a computer. It is most famous for its "turtle graphics," which lets users draw shapes by giving simple commands to an imaginary turtle. The Apple implementation (Apple Logo) shows the turtle as a triangle on the screen.

Along with turtle graphics, Logo also includes a programming language that is good with words and strings. Both the graphics and programming parts are extensible, meaning that you can define new routines from existing commands and then use those new routines just as if they were part of the Logo language.

PILOT

A computer language developed for writing computer-assisted instruction (CAI) programs. The language uses simple commands customized for presenting material, soliciting responses, and then matching inputs with sets of possibilities. Thus, writing computerized lessons in PILOT is easier than it would be in a general-purpose language such as BASIC. Apple offers two versions of PILOT, and other commercial and public-domain PILOTs for the Apple II family are also available.

PLATO

A computer-based educational system from the Control Data Corporation. The system is based on about a dozen linked mainframe computers. The thousands of PLATO courses cover general education, industrial training, high-school equivalency, job skills, and organizational methods. Until recently, you needed a special plasma-display terminal to use the PLATO system, but now you can run the Home PLATO service on your Apple. Control Data is also marketing stand-alone instructional programs for the Apple under the PLATO trademark.

SIMULATION SOFTWARE

Software that presents you with a set of facts concerning a particular situation or event, solicits your inputs about what to do next, and then shows you what the results of your decisions would be. Simulations show up extensively in industrial training and often in educational and game software.

SME

An abbreviation of *subject-matter expert*—a person who supplies the content for computer-assisted instruction (CAI) lessons or artificial-intelligence (AI) expert systems.

SUBJECT-MATTER EXPERT

The person who supplies or checks the content for computer-assisted instruction (CAI) lessons or artificial-intelligence (AI) expert systems. In most cases, the SME works in a team with experts in instructional design or AI and perhaps a programmer, researcher, and graphic artist to create the lessons.

TRAINING

As applied to computerized instruction, *training* generally refers to lessons about a specific task-related skill; *education*, on the other hand, refers to general instruction in broader topics. Commercial and industrial training is one of the largest applications for computerized instruction.

VALIDATION

In computerized instruction, trying a lesson out with a group of students to check that it proceeds the way it should. Full validation tests whether students have actually learned the material; program validation simply checks whether the flow of lesson screens takes students from beginning to end. +

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BUSINESS TURNS TO COMPUTERS FOR TRAINING THE workforce

Apples are making inroads into a new educational setting: business and industry. Educators have come to accept personal computers as effective teaching tools both in the classroom and at home, but the business world has taken longer to realize that many training functions can be streamlined with the aid of computers.

Now, Apples are teaching sales representatives about new products, student pilots how to fly helicopters, managers how to improve their interpersonal skills, and Army personnel how to repair missiles. The American Heart Association uses Apples to monitor whether correct force is applied during cardiopulmonary resuscitation (CPR) training.

These kinds of training are specialized, which is just one reason why personal computers have gotten a late start in industrial training. Cost is another factor—training departments frequently have small budgets, and innovations always require a heavy initial outlay. Once they are in place, however, computer-based training systems have many advantages: They can be used over and over, are easy to update, can be sent to diverse locations, and are infinitely patient. When teamed up with other equipment, such as videotape or videodisc machines, computers can deliver superb training.

The growth of computer-based training has been irregular. Some areas of business and industry have developed extensive programs; others have just begun to explore the options. Consulting companies design custom training programs at high prices, but the cost is coming down, and software and hardware to help you develop your own training programs are becoming available and affordable. A system can be as simple as a single interactive diskette or as complicated as a combination of disks, video monitors, videotapes, and ancillary equipment. Let's take a look at what's available and what it can do for you.

If you've ever encountered a computer whose screen had a series of questions awaiting answers, you've seen interactive software in action. Programs like this are part of all computer-based training programs. One of their most common functions is to teach you about computers; in addition to presenting information, they also provide hands-on experience with the machine. You use a computer to learn about it.

Computer-based training systems are easy to update and infinitely patient.

Imagine that you are employed in a small company that has purchased several computers, some word-processing software, and perhaps a spreadsheet package. A few years ago, your options for learning how to use the equipment would have been limited to struggling through the manual, with your boss breathing down your neck, expecting you to increase your productivity immediately. But things are changing.

Interactive training diskettes are available from companies such as Cdex and ATI. These tutorials are designed to teach you how to use many of the major microcomputer software packages (VisiCalc, WordStar, and BPI General Accounting, to name just a few) on the market today. Prices range from $65 to $75. At first glance, these figures may seem a stiff price to pay to learn to use a product that cost $150–200 in the first place. Another way to look at it, though, is in terms of the time you spend learning. You may spend 20–40 hours getting down a complex application, but the tutorials can get you through the basics right away.

ATI also provides samplers that compare different brands of application packages. For $12.95, for instance, you can purchase an overview of eight different word-processing programs. Again, you save yourself research time and gain a quick sense of which program is right for you.

Interactive software is the simplest form of computer-based training. Some companies are now adding an audiocassette that you can play while you work through the tutorial. Additional hardware (videocassette players and color monitors, for example) provide the capability for more advanced training systems.

One of the most advanced computer-based training systems currently in use is the Electronics Worksite Training Program developed at the College of San Mateo, in San Mateo, California. This program has been over four years in the making, and workstations for it are located across the United States. Extensive courses in AC and DC electronics are available. I took a look at one module of the series, which involved assembling a circuit, to see how it worked.

Each workstation consists of an Ap-

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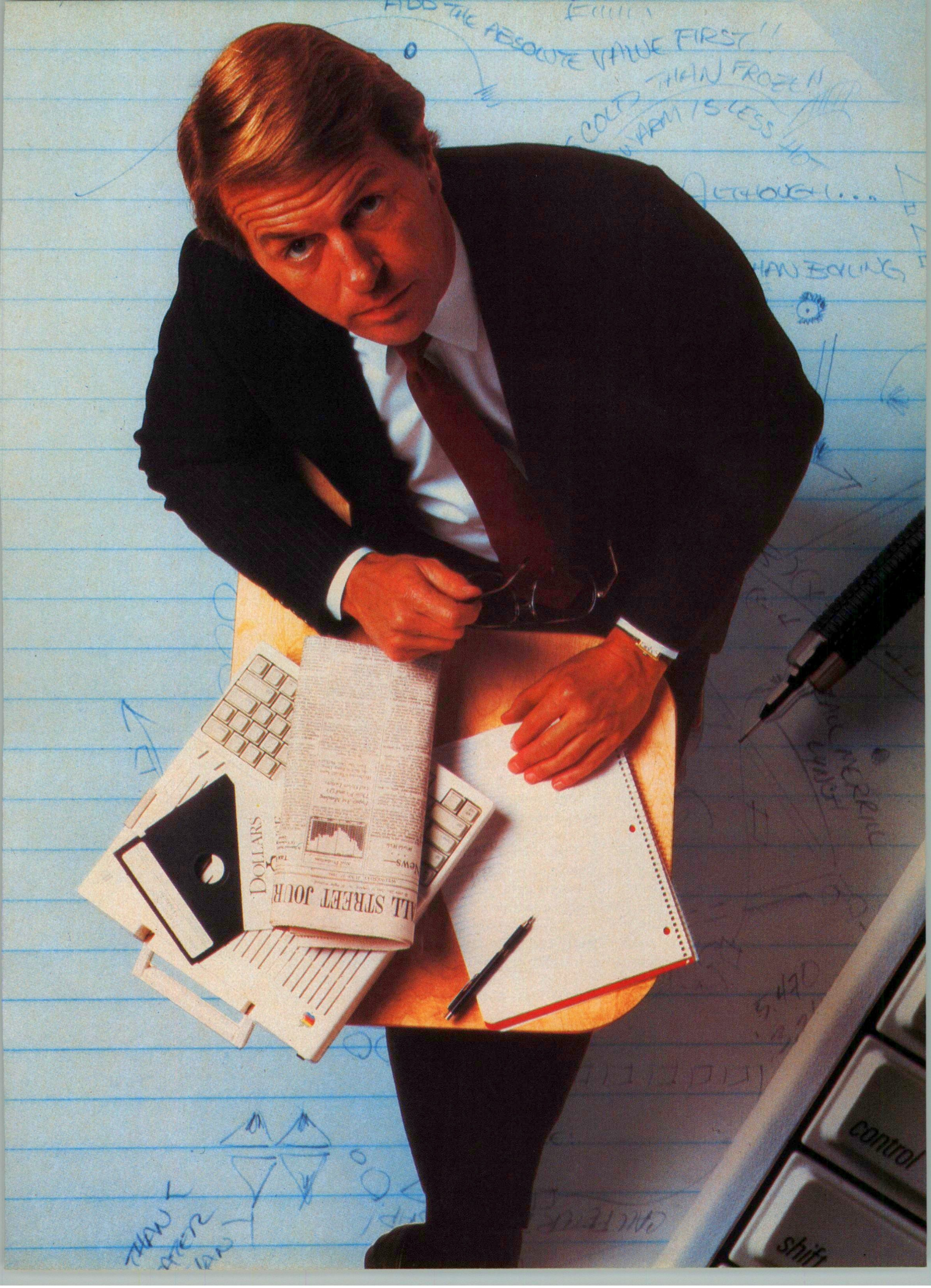
control
shift

ple II Plus or IIe with two disk drives, a Sony Betamax, a color monitor, earphones, a special interface card, and electronics equipment such as a multimeter, signal generator, digital frequency counter, and a semiconductor-parts kit. A course has 12–15 modules and requires 24 videotapes, 60 diskettes, lab manuals, and other written materials. A necessary adjunct to each station is a phone to use as a hot line when you need help.

If you do your homework for a lesson, you read some theory and concepts before going to the lab and logging on. A special disk can record your name and scores on any quizzes that you take. The first part of the lesson is a review of prior work.

The program then tells you how to set up your equipment for today's lesson. The video screen shows the lab equipment, and you assemble the circuit in question. Afterwards, you hook up the test equipment to your circuit and take various measurements, entering your readings at the keyboard for the program to check against the correct answers. After completing the exercise, you take a post-test of randomly generated questions (no two tests are the same). The program does not let you proceed to the next lesson until you have mastered the current one.

I give this lesson an A for its excellent teaching style. The extensive color graphics, use of sound to present explanations, and the possibility of pausing or reviewing some particular topic all make this lesson more interesting than reading a textbook and more paced to your needs than a classroom lecture would be.

Of course, a program as extensive as this costs money. Each course costs around $10,000, and the price of the necessary hardware can bring the total up to $22,000. Nevertheless, you can find these workstations in a variety of Silicon Valley electronics companies. Companies usually use the systems to upgrade the skills of current employees. The alternatives (sending them to school or giving them one-on-one training) would cost the same, if not more. Once these workstations are in place, companies can use them 24 hours a day to train as many people as schedules permit.

Doing It Yourself

Like all new technologies, computer-based training systems were originally expensive and complicated, but now the price is dropping, and new software and hardware products are making the creation of training programs less intimidating. To help you design interactive lessons on diskette, software developers have created special lesson-creation languages called "authoring languages." These programs are designed to reduce the amount of complex programming that goes into designing lessons.

One of the best-known authoring languages is Apple SuperPILOT. True to its educational nature, this $200 program comes with its own self-paced tutorial (Apple Co-PILOT) to help you learn the program. Once you have the basics down (the tutorial takes about 40 minutes), you'll be able to begin creating lessons. SuperPILOT lets you create double-size characters, color text with color backgrounds, graphics, animation, and sound effects.

Expect to see an explosion of training programs in the near future.

When you've created and saved your graphics and sound, you write text and include instructions about when to call up the graphics. The program can record student responses and grades for your records. Lessons can be as simple or complicated as you want them to be. With SuperPILOT and an Apple, you can easily create interesting interactive lessons that are more than just an on-screen textbook.

Other authoring programs are rapidly becoming available. The Whitney Interactive Video System for the Apple II Plus, IIe, and IIc includes the Insight 1000 Plus Authoring Program, which lets you write text with AppleWriter. JAM, Inc., includes its DiscWriter course-authoring system as part of its laser-videodisc program in computer literacy.

The more advanced systems combine Apples with videotape or videodisc machines. In these instances, the Apple not only creates programs, lets the learners do lessons, and keeps track of records, but it also manages and coordinates the rest of the hardware. In a simple system that employs a disk and an audiocassette player, on the other hand, the user performs this function. The Electronics Worksite lab hardware uses an interface card designed by Whitney Educational Services that provides the electronic link between the Apple and the videocassette player, so that you can show material from each in any preset sequence.

Companies that specialize in training systems usually provide all the components you'll need to set up such a system, sometimes including lesson content.

For example, the JAM Introduction to Computer Literacy system includes two double-sided laser disks covering topics such as hardware, software, telecommunications, and new technologies; floppy disks containing the program software; users' guides; and the DiscWriter authoring system. You can purchase the JAMCARD interface and the DiscWriter system separately. The Whitney Interactive Video System for the Apple II consists of the Whitney Interface Card, Insight 1000 Plus Authoring Program, computer diskettes, and an interactive video demonstration. In addition, Whitney Educational Services provides hardware interfaces for videotape/videodisc, and other authoring packages.

Experts in the field of computer-based training agree that they've just scratched the surface. They expect to see an explosion of business- and industrial-training programs in the near future. As prices go down and the technology improves, more and more companies will discover the advantages of turning training over to personal computers. +

FURTHER INFORMATION

Cdex Corporation
5050 El Camino Real, Suite 200
Los Altos, CA 94022

JAM, Inc.
42 East Avenue
P.O. Box 40285
Rochester, NY 14604

Software Training Company
A Division of ATI
12638 Beatrice Street
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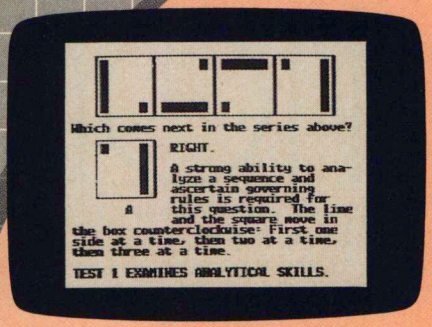

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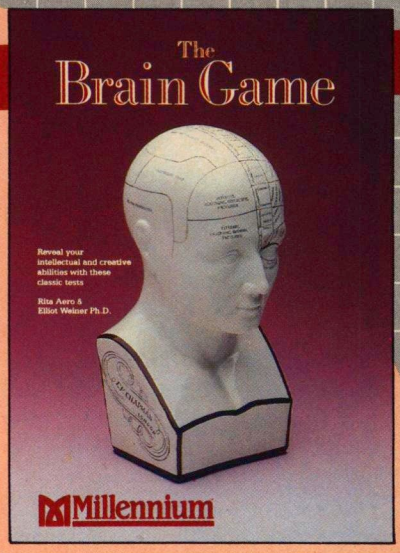

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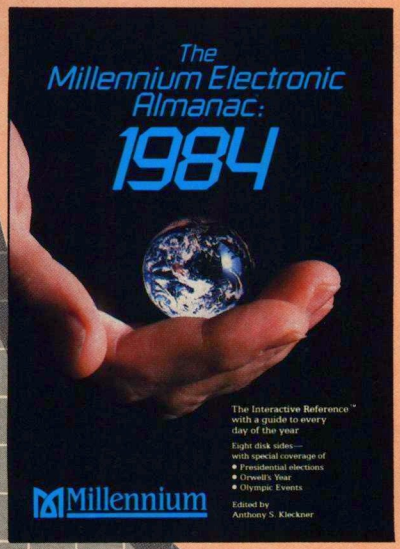

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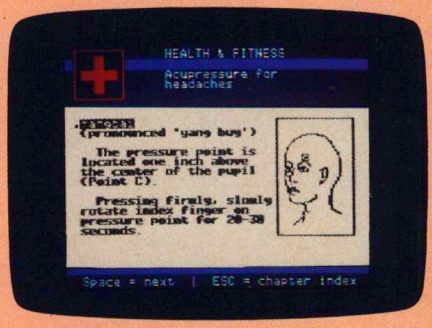

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FROM MATHEMATICS TO GARDENING, LOOK FOR THE BLOOM IN adult education

The adult-software market is still in its infancy, and it may not mature until young computer users who are growing up on today's software for children can tell developers what they want.

Even now, it's hard for most of us to remember how recently the microcomputer boom originally took place. Let's face it, despite the headlong pace of technological change in this country, five to seven years isn't long enough for it to penetrate every available market.

Although the educational market as a whole took off a couple of years ago, software designed to help people of college age and above learn a wide variety of skills and subjects—especially software that genuinely engages the adult intellect—largely remains to be written. Software that's both technologically and conceptually state-of-the-art may be even further away.

The Untapped, Unknown Market

In 1982, Americans spent $12 million on educational software to be used outside of the schoolroom, according to Talmis, Inc., a Chicago-based market-research firm that specializes in computers and education. In 1983, however, that figure leapt more than 780%, to $94 million.

According to SRI Research Center, the high-tech market-analysis division of the firm Selection Research, Inc., in Lincoln, Nebraska, 16% of the computer-owning population used their microcomputers for educational purposes (as defined by the user). As of May 1984, that percentage had more than doubled, to 38%.

All available evidence indicates that little of that river of funds is flowing to adult education. Instead, it's flooding the kindergarten-through-eighth-grade market.

A quick flip through the catalog of SoftKat, Inc., probably the nation's largest distributor of educational software, shows that among the 53 developers represented in its pages, the overwhelming majority have directed their efforts at the elementary-school level. Except for some flurries in the science and mathematics areas, the adult-education software market has barely been scratched.

The adult-education software market has barely been scratched.

Debra Sutton, SoftKat's vice-president of sales, said, "There's a void of adult-education software, the same way there's a void of special-education software for the learning disabled. I think that with educational software being as new a phenomenon as it is, people haven't really explored all the avenues they should address."

Sutton noted that even the college-level programs tend to be like textbooks, workbooks, or flash cards transmuted into screen form.

"We have people saying, 'Listen, we want to get into the educational-software business, we've got programmers, and everything ready to go. What do you recommend we focus on?' And we tell them it's wide open in special education and adult education. This is where we're seeing a real need within the marketplace. Sometimes they take the advice, and sometimes they don't.

"Mainly they're looking at what's already selling, and they want a piece of the cake."

Part of the reason elementary-level software sells better is that the installed computer base is much larger in elementary schools, said Sutton. In a junior- or senior-high school, students may have access to a total of eight or ten computers, she said, "whereas in an elementary school, they will have 30 to 50 in one classroom, and they'll have three or four classrooms of them." Elementary schools own an average of 32 software packages per school; junior- and senior-high schools make do with 16 per school.

At the college level, the number of available packages drops steadily until at the master's level, said Sutton, "students are out of luck—unless they're going for their master's in computer science."

Most of the firms contacted ex-

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pressed the belief that adult education is the wave of the future—the next big growth area for software—and they were *just about* ready to enter the field.

For instance, Lee Rade, public-relations director for Avant-Garde, said his company had been concentrating on remedial-math and language-skills programs, but now would be targeting the children's home-education market. "As far as developing software specifically for the adult-education market, it's something we want to move into, but we're right on the edge of it."

Sheryl Leach, software-marketing manager for Developmental Learning Materials (publisher of Academic Skill Builders and Drill Builders), said that DLM would publish more upper-bracket adult-education software early this fall.

Even the research firms and distributors told me they were just about to study this area, or were expecting more software.

What's There Now

Of the more than 300 educational-software packages SoftKat offers in its catalog, about 20% aim mostly or partially at the above-high-school market.

Actually a wide variety of adult-oriented programs exists, said Kathy Hurley, vice-president of microcomputer software for Grolier Electronic Publishing.

Hurley, while in the process of compiling a catalog of software for home computing, unearthed a range of software for grown-ups that met every definition of the word *educational*: software for analyzing stocks and bonds, dream analysis, auto mechanics, health and dieting, planting and gardening, home safety, real-estate investment, car costs, and football strategy. The list doesn't include computer-literacy kits or scholastic-aptitude and achievement-test skills.

The problem may lie with the mechanics of marketing. Sheryl Leach quoted Andrew Bingham, president of DLM, as saying the home market "might keep the revolution in educational software from happening, because the people who really know about educational software are going for the home market instead."

Said Leach, "It could be that educational software will not evolve to its utmost because of all the money in the home market. Not all of the developers are the knowledge people. They'll put their money in what they *deem* to be creative, innovative, and educational; and sometimes it's in direct conflict with what truly *is*. The dollars say that the home market dictates. If you're a software manufacturer, it's in your best interests to go where the money is; and that's not necessarily the best way to go."

What Is Educational Software?

I have intentionally avoided giving a definition of "adult-education software" because the concept is not at all clear. Each different expert produces a different answer.

Debra Sutton of SoftKat said, "It's easy to categorize everything when you're in the primary and secondary levels of education. Everything's math, science, social studies, history—when you get into adult education, it's very difficult to draw the line."

When does business-training software become adult education?

For instance, when does business-training software become adult education? Western Behavioral Sciences Institute in La Jolla, California, offers executives an $8000 schooling by computer that they can undergo at home, typing on their own terminals. In this instance, it's hard to say where training leaves off and education begins.

Future Software

Whatever the definition, developers and researchers alike agree that the boundaries of adult-education software are due to change in the next few years.

Hurley suggested that books and software would be teamed more frequently and that interactive fiction and preprogrammed databases would increasingly enter the market.

Leach envisioned a combination of computer and videodisc that would, for instance, permit users to study history by seeing history on the screen. "Take children or adults back to the medieval days by letting them see the ruins that exist today. You could study problems of architecture, costume, dress, and agriculture. Include not only programs that give question-and-answer-type branching and problem solving, but also actual simulation that would get you there—that would combine with real-world things and make them relevant."

For now, the adult-education software market is more one of potential than fact. Maybe we will have to wait for our grown-up children to articulate their needs as adults before that market potential can be realized. In the meantime, we might do well to emulate our children, who have taken to computers with ease and rapidity. Said Avant-Garde's Lee Rade, "At first adults don't see it for themselves; kids are more receptive. But eventually adults get turned on to using the computer for education and self-improvement. Maybe it's sort of natural. People learn a lot from their kids." +

FURTHER INFORMATION

Avant Garde Creations
1907 Garden Avenue
Eugene, OR 97403
(503) 345-3043

DLM Teaching Resources
P.O. Box 4000
One DLM Park
Allen, TX 75002
(800) 527-4747; in TX (800) 442-4711

Grolier Electronic Publishing
95 Madison Avenue, Suite 407
New York, NY 10016
(212) 696-9750

Selection Research, Inc.
301 South 68th Street
Lincoln, NE 68510
(402) 489-0351

SoftKat, Inc.
15015 Oxnard Street
Van Nuys, CA 91411
(818) 781-5280

Spinnaker Software
215 First Street
Cambridge, MA 02142

Talmis, Inc.
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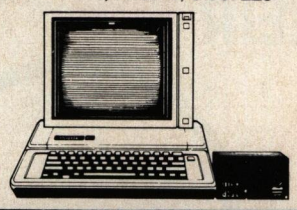

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KIDS ARE LEARNING MORE THAN THEIR abc's

Your family's computer can be a powerful force in the intellectual development of your children, and September is a good time to think again about the role it has played—and can yet play—in your children's education.

This article focuses on three key developmental factors and provides specific suggestions about them.

1. To begin, don't underestimate the impact of the family environment on child/computer interaction. The informal learning atmosphere of a supportive home has definite educational and developmental advantages over the frantic atmosphere of a video arcade or the formal atmosphere of a school.
2. Accept your children's view of the computer as an exciting toy. It's an electronic doll, a magic chalkboard, a puzzle palace. The noted Swiss psychologist Jean Piaget insisted that play is the serious business of childhood. It's the best way for children to explore and finally understand the complex interacting forces and objects of the physical world. You can *work* at your computer if you wish, but you'll have to let your children *play* at it.

Real play is exploratory and educative. Children respond to stimulating activities on expensive computers with positive play.

3. Draw on current cognitive theory and research. Our understanding of factors that affect the development of the human brain and its mental processes has increased markedly in recent years. This knowledge can help you use your computer to enhance the intellectual development of your children.

The following sections summarize cognitive theory and research and suggest specific types of positive computer/child interactions during three major developmental stages identified by Jean Piaget—the preschool period, the elementary/middle-school years, and adolescence.

A Developing Brain

The human brain weighs about one pound at birth. It doubles in weight during the first year after birth and adds a third pound during childhood and adolescence.

Accept your children's view of the computer as an exciting toy.

The brain, as it develops, quickly creates the environmentally independent neural machinery for survival—the general organizational structure and the regulators of basic life processes that are the same in all humans. Then, more slowly, the brain develops the environmentally dependent neural machinery of social interaction and problem solving, which varies among societies and people.

The brain is composed of more than 50 specialized areas. Gradually, during the first 16 years of a person's life, these specialized areas connect and integrate mental processes that are generated in young people as they confront increasingly complex patterns and problems in their environment. It appears that related specialized areas initially create more connections than the brain needs—to allow for different human environments. Parenting, teaching, and experience help determine the child's most efficient set of connections, and a process called synaptic pruning eventually eliminates connections that aren't used.

Language development illustrates this developmental strategy. An infant has the potential to learn any of the world's 3000 languages (which range from 13 to 71 sounds), but most children need to become fluent only in the language spoken in their immediate environment. Thus, the child's brain reduces its initial broad language capacity to a simple, more efficient, single-language system. Conversely, the two-year-old's limited language ability increases in complexity to 5000 words and 1000 rules of syntax by the time the child begins school, and to more than 50,000 words by adulthood.

The developing brain adapts itself to the demands of its environment, and this specialization helps it master even the most complex elements of that environment.

Genes create a basic human brain; the environment helps to shape it into a unique brain. An intellectually stimulating environment during childhood and adolescence can stimulate the learning (cognitive) process in children and enhance the growth and efficiency of connections among related brain areas, creating a broader, more rapidly functioning mind.

Computers are and will be an integral part of your children's environ-

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Look at the arrows. Trace the letters. Now write the letters and words.
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ment. Thus, factors such as a computer's ability to process information rapidly can affect your children's mental development.

How can your family computer enhance this development?

The Preschool Period

Preschool cognitive development focuses on basic environmental and social interactions through the development and integration of a complex sensory system that monitors variations in temperature, physical contact, air pressure, light rays, and the chemical composition of food and air; a muscular-control system that learns how to control conscious and unconscious movements with increased precision; and oral comprehension and speaking skills and related social behaviors.

Your computer can supplement the many informal family interactions that stimulate the development of these functions in your children. For example, can you recall anything in your childhood that required the quick eye/hand coordination of a joystick-operated computer game? These games can enhance the development of important sensorimotor functions—eye/hand coordination, spatial/vector relationships, and the ability to predict observed movements.

In many respects, video games are the logical extension of Saturday-morning cartoons, with children now getting into the animation itself by affecting movements on the screen and becoming an integral part of the story.

Further, good software programs provide electronic extensions of such important early-childhood spatial activities as finger painting and drawing. For example, Facemaker (Spinnaker) introduces young children to the keyboard and to the concept of programming through face-drawing activities. Paint (Reston) allows children to transfer the colored pictures in their mind to the computer screen. Delta Drawing (Spinnaker) allows them to color any shape they made on the screen.

Use your word-processing program to introduce your preschool children to the computer and to the concept of written language. Type a word and ask your child to reproduce it or reverse it on the next line. Create pattern/sequence games that require your child to type the next element in the sequence: XIIXIIXI_, ABC CBA DEF ___. Ask your child to type his or her name, but to leave two spaces between letters. Type the stories your child dictates to you . . .

The Elementary/Middle School Years

Elementary-school children develop the ability to integrate, classify, and store complex sensory information; use concrete objects to organize and perform variable and reversible operations; and expand materially their ability to master written code systems (language, music, math, and so on).

Your family computer can complement many of the formal language and math activities that dominate the elementary-school curriculum. Keyboard/word-processing skills are especially important to a child growing up with a computer.

Computers are and will be an integral part of your children's environment.

Hi-Res Mastertype (Lightning Software), which uses a game format, and Typing Tutor II (Microsoft) are fine keyboard-skill programs. Kidwriter (Spinnaker) adds pictures to the stories children write, and Story Tree (Scholastic) provides story shells that children can expand in a variety of ways.

Word-processing programs remove much of the drudgery of editing. Preliminary studies with The Bank Street Writer (Brøderbund), a simple word-processing program widely used in schools, suggest that middle-school students on a word processor enjoy writing and spend more time in editing their work than those working with paper and pencil or typewriter.

Ease of writing and editing means little, however, if the writer can't improve the quality of the writing or isn't encouraged to write. Encourage your children to read well-written children's books. Subscribe to quality family magazines. Place a good set of reference books next to your computer. Read what your children write, and talk positively about style and syntax.

Logo (Apple) is perhaps the most widely acclaimed computer program for children. Developed by Seymour Papert of MIT (Massachusetts Institute of Technology), Logo provides children with an easily mastered computer language that creates marvelous graphics and then goes way beyond in developing computer literacy. Since buying Logo is an expensive decision, you might want to read Papert's excellent paperback book, *Mindstorms: Children, Computers, and Powerful Ideas* (Harper and Row, 1980), which is a discussion of the philosophy that underlies Logo and its approach to the development of logical thinking.

Songwriter (Scarborough Systems) approaches music in much the same way that Logo approaches space. Children use a screened keyboard to compose simple to complex songs.

Moptown Hotel (The Learning Company) uses seven attribute games to help children develop important classifications and logical problem-solving skills that develop during these years.

Enter, produced by Children's Television Workshop, is a fine children's magazine on computers and electronic games ($14.95 a year). It also provides useful information on new software.

Adolescence

The childhood development of sensorimotor systems, the ability to internalize the external world, and basic classification and language skills prepare the adolescent for the final frontal-lobe development that facilitates mature logical, abstract, hypothetical, and planned thought and action. Secondary-school curricular and extracurricular activities include labs, games, and projects to encourage adolescent decision making in nonthreatening situations—to help prepare them for the real-life decisions they will have to make as adults.

Your adolescent children can use the family computer to advantage to write school papers and create programs for their computer courses. The recreational software available for this age group encourages the development of thought processes through simulation, fantasy, logic, and decision making. For example, Karel the Robot (Cybernetics International) teaches the fundamentals of Pascal and structured programming. Volcanoes (Earthware Computer Services) is a fine science simulation. Adventure (Apple) allows the player to seek adventure down the electronic road, and Sargon (Hayden) plays a good game of chess.

You and your children share your home with a computer. Make the relationship a comfortable one for all and an intellectually stimulating one for your children's developing minds. ✚

▸ FURTHER INFORMATION

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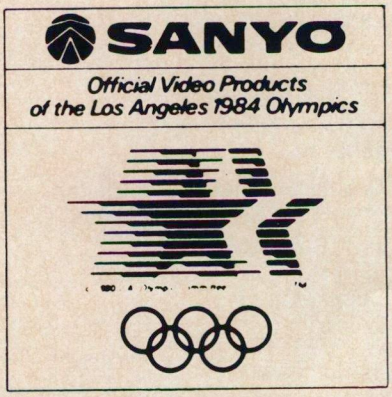

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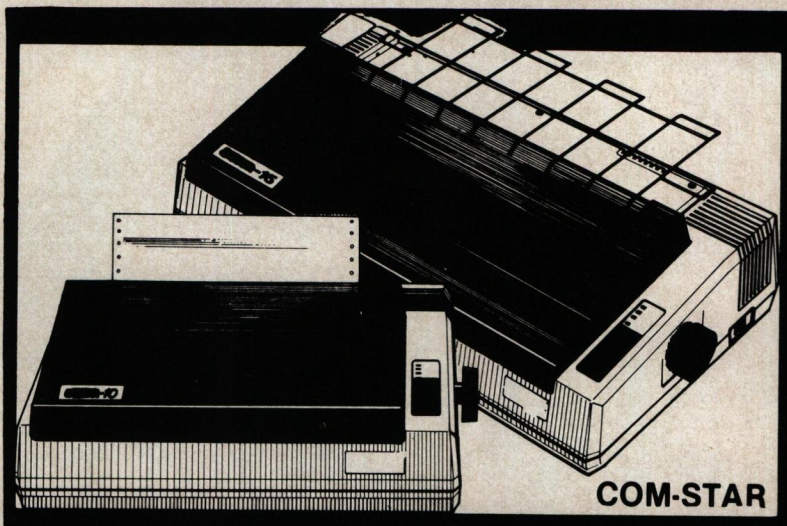

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MULTILINGUAL APPLES

TO LEARN A FOREIGN LANGUAGE, TURN TO YOUR APPLE . . . *CUALQUIERA MANZANA*

Trying to learn a little *français* before you hit the Alps this winter? Are you tired of adding umlauts and cedillas by hand to your business correspondence?

Whether you're a newcomer to foreign languages or a fluent businessperson dealing with many countries, don't overlook a valuable helper sitting right on your desk—your Apple computer.

For beginning language students, computers can provide the repetitive practice so necessary in sharpening grammar and vocabulary skills. They won't wander off to another student just when you need help or get upset because you still don't know how to conjugate *être* after 15 tries.

DOW CLEMENT PHOTOGRAPHY

If your goal is working in a foreign language, you've really hit pay dirt. Computers don't know—much less care—what combination of dots they put on the screen when you press a key, so it might as well be a ¿ as a ?. And yes, you can print your text, either on a dot-matrix or on a daisy-wheel printer.

Getting Started

First things first: How can you use your Apple to learn another language?

For starters, you should have a computer from the Apple II family (or a III running in emulation mode). The II Plus, IIe, and IIc are the most popular Apples for educational programs, and all the programs I'll be mentioning in this section were written for the II family.

COMPUTERS WON'T GET UPSET BECAUSE YOU STILL CAN'T CONJUGATE *ÊTRE* AFTER 15 TRIES.

No one's going to claim that computers can replace a native speaker for language instruction. They are, however, excellent for the nuts-and-bolts practice you'll need to master the basics, and they're also good for teaching non-Roman alphabets, such as Hebrew and Russian.

The good news is that a lot of foreign-language software is available for the Apple II. The bad news is that very little of it is suitable for the absolute beginner. You'll almost certainly need to supplement your computer work with a class or at least a good textbook. That's not a recommendation to forget the whole thing—just a cautionary note.

Surprisingly, I found only one language program that is available with audio cassettes. This lack of pronunciation guides points up the importance of using the computer as a support for your language studies, not as the only source.

French, German, Spanish

I've lumped these languages together because software houses frequently publish similar programs for all three. The packages from Gessler Publishing (see Polyglot Software chart) provide a good sampling of what you can expect from foreign-language software, so let's look at them more closely. The ones I received for review were Le Présent and Le Passé Composé des Verbes Réguliers et Irréguliers, Deutsche Grammatik "Der-Die-Das," and Spanish Word Order.

The three programs vary considerably in style, indicating that Gessler has purchased existing software from various authors, instead of commissioning programs with consistent design and format. (Presumably, a given language series is more consistent.) The variations are interesting, though, because they demonstrate some of the common good and bad design features of foreign-language programs.

For instance, the German and French programs don't give you translations of the practice sentences after you've completed them. I successfully typed in Ils ont rendu des livres à la bibliothèque. without ever finding out exactly what it meant. This approach hardly seems sporting, even if Gessler assumes you're using the program in conjunction with a class.

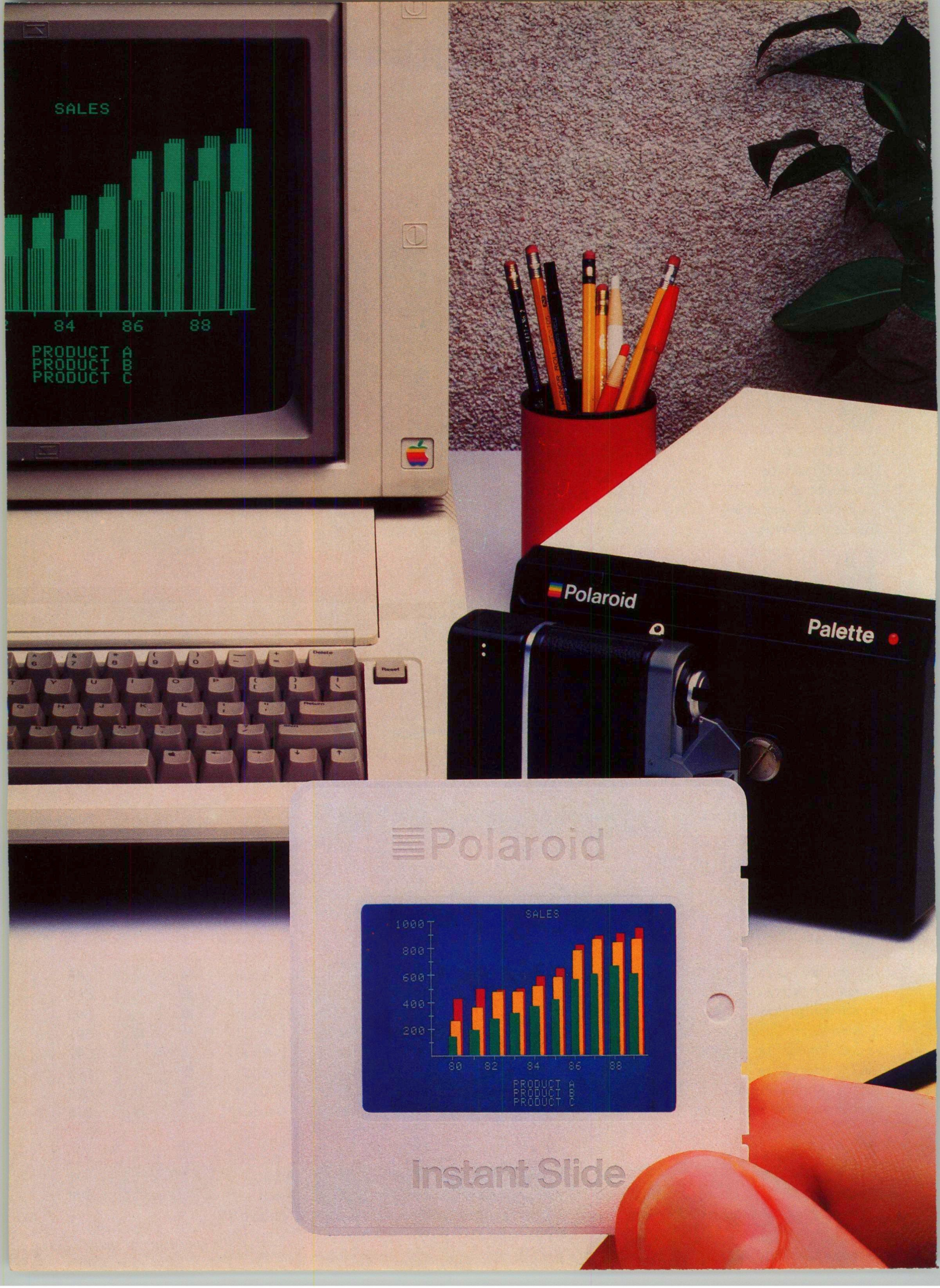
The German program has another

CIRCLE 215 ON READER SERVICE CARD

POLYGLOT SOFTWARE

			IIc COMPAT-IBILITY	AGE LEVEL	EXPERIENCE BEG	EXPERIENCE INT.	CARD #
CHINESE							
Chinese Lessons	Computer Translations	$ 34.95	■	16-Adult	■		570
FRENCH							
Vocabulary Builder	Control Data	49.95		12-Adult	■		571
Classroom Words	Control Data	49.95		12-Adult	■		572
Travel Vocabulary	Control Data	49.95		12-Adult	■		573
Le Présent . . . (verbs)	Gessler	55.95	■	5-Adult	■		574
Vocabulary on the Attack	Langenscheidt Publishers	39.95	■	12-Adult	NA		575
French Achievement I	Microcomputer Workshop	49.95	■	16-Adult	■		576
French Achievement II	Microcomputer Workshop	49.95	■	16-Adult		■	577
GERMAN							
Vocabulary Builder	Control Data	49.95		12-Adult	■		578
Classroom Words	Control Data	49.95		12-Adult	■		579
Travel Vocabulary	Control Data	49.95		12-Adult	■		580
Deutsche Grammatik	Gessler	31.95	■	5-Adult	■		581
The German Way	Langenscheidt Publishers	49.95	■	14-Adult	■		582
HEBREW							
Hebrew Reading (includes cassette interface)	ICJL	75.00	■	8-Adult	■		583
Dynamic Hebrew Dictionary	ICJL	50.00	■	8-Adult		■	584
JAPANESE							
Hirogana	Computer Translations	34.95	■	16-Adult	■		585
LATIN							
Vocabulary on the Attack	Langenscheidt Publishers	39.95	■	12-Adult	NA		586
RUSSIAN							
The Russian Disk	Instant Software	29.95		16-Adult	■		587
SPANISH							
Vocabulary Builder	Control Data	49.95		12-Adult	■		588
Classroom Words	Control Data	49.95		12-Adult	■		589
Travel Vocabulary	Control Data	49.95		12-Adult	■		590
Spanish Word Order	Gessler	37.95	■	5-Adult		■	591
Vocabulary on the Attack	Langenscheidt Publishers	39.95	■	12-Adult	NA		592
The Mexican Way	Langenscheidt Publishers	49.95	■	14-Adult	■		593
Spanish Achievement I	Microcomputer Workshop	49.95	■	16-Adult	■		594
Spanish Achievement II	Microcomputer Workshop	49.95	■	16-Adult		■	595
PRODUCTIVITY							
The Great Creator	Gessler	299.00	■	Adult	NA		596
The Linguist	Gessler	44.95	■	Adult	NA		597

NOTE: All programs require 48K memory and are compatible with the Apple II, II Plus, and IIe.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84
86
88
PRODUCT A
PRODUCT B
PRODUCT C
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Works with the graphics packages of the IBM PC or XT, DEC Rainbow, Apple IIe and II+ as well as other pcs.

The Polaroid Palette is designed to work with many graphics software packages. In fact, when using such popular programs as Graphwriter, Chart-Master, Sign-Master, DR Draw and DR Graph, Palette can virtually double both the horizontal and vertical resolution of your monitor. Plus, a "backfill" feature reduces raster lines for a smoother, more finished appearance. The result—presentation quality slides. On-the-spot.

Color 35mm slides, even from a black and white CRT.

Think of it as an artist's palette. Because Palette "paints" your graphs, charts and text. You're choosing from up to 72 colors. If you don't want red, press a few keys—it's green. And if you're not the artistic-type, Polaroid has developed a menu of color sets: combinations of colors that have been specially coordinated to complement your presentations. And all of this is yours, even if you have a black and white monitor.

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quirk: It doesn't faithfully reproduce the German character set. OK, so lots of textbooks and dictionaries forgo the traditional *ß* for *ss*; they don't abandon umlauts, though. This limitation relates to the Apple II's ability to generate unusual characters.

The character set you see on the monitor of your Apple II (any Apple II, including the IIc) resides on a chip inside the computer. To produce any characters other than the ones stored in that ROM chip, you have to change ROM chips or program the characters in one of the Apple II's graphics modes, which is a pain in the neck.

Therefore, I understand why the authors of Deutsche Grammatik didn't want to write the whole program in a graphics mode just to get a couple of silly dots above the umlauted vowels. Nevertheless, the alternative—namely, adding an *e* after the vowels—takes some getting used to. Seeing old standbys such as *für* and *über* suddenly showing up as *fuer* and *ueber* is disconcerting. Aside from having that small gripe, I think Deutsche Grammatik is a fine program, and it has one feature other programs would do well to follow: It teaches you to run the program in the language you're studying. For instance,

DEUTSCH GRAMMATIK TEACHES YOU TO RUN THE PROGRAM IN THE LANGUAGE YOU ARE STUDYING

the first few times the command Press space bar to continue appears, it's in both English and German. Then the English disappears, and you find yourself responding to the German prompt. The same goes for such frequently used prompts as Type the number of your choice and Check your spelling.

Spanish Word Order was produced in Apple II graphics, so it has the full range of Spanish characters. Grammar hints and English translations of individual words are available during the exercises—and yes, it does translate the whole sentence when you're done.

The program does, however, have one extremely annoying feature that impels me to issue an ultimatum to educational-software publishers: Don't put sound effects in your programs without giving users some way of turning them off (in the case of the IIc, the volume control will solve the problem). This particular program emits about 15 seconds of annoying beeps while it's booting. It also buzzes every time you type a wrong answer—even if you've chosen the No Sound option.

These three typical programs demonstrate that you should decide how you feel about such features as translations, accurate alphabets, and sound effects (or lack of same) before you purchase foreign-language software.

Esoterica

French, German, and Spanish are definitely the "big three" foreign languages in this country, but several others have also attracted the attention of Apple programmers.

The Institute for Computers in Jewish Life offers a wide range of programs, including the introductory Learning to Read Hebrew. It's an excellent introduction to the Hebrew alphabet and is available with audio cassettes. Unfortunately, the cassettes aren't well integrated with the computer. The speaker on the tape goes too

PROGRAMMERS: New DAVID-DOS II™

HIGH-SPEED DOS 3.3
DOS-MOVER/FAST-GARBAGE

Makes high-speed disk access under all conditions. DOS-mover frees 10,000 bytes of extra memory for programs. FRE command does ultra-fast garbage collection. Clock or manual disk dating. May be licensed.

100 Sectors in 7 Seconds

Speed Load/Save Applesoft, Binary & Integer 100 sector programs in 7 seconds. Tload/Tsave Random & Sequential Text Files at same speed. Speeds up programs like Home Accountant.

10K More Memory

Use HIDOS command in hello program for turnkey startup, adding 10K free memory to run 30% larger Applesoft programs than ProDOS. Moves DAVID-DOS II and 4 buffers above main memory.

Ultra-Fast Garbage

New FRE command collects a memory full of 6000 strings that are half garbage in two seconds. DOS 3.3 takes 12 minutes. FRE is so fast it is not noticeable during run of most programs.

Clock Dating

Automatic date stamping of disk files is set up for 6 kinds of clocks or Hello manual date entry. New DATE command will auto-insert date in correspondence.

All times in seconds. (Time Test programs available)		DAVID DOS-II	ProDOS	DOS 3.3
TEXTFILES (100 Sectors)	TSAVE	8.0	NO	NO
	TLOAD	6.2	NO	NO
(791 Strings, 32 chars ea)	WRITE	29.3	28.0	88.4
	READ	24.3	16.3	83.8
	PRINT/READ	44.2	45.9	117.1
(442 Sectors, 7 x 500)	APPEND	142.3	142.9	1231.2
APPLESOFT (100 Sectors)	*SAVE	6.4	16.4	33.1
	LOAD	5.0	4.0	23.5
INTEGER (100 Sectors)	*SAVE	6.6	NO	33.4
	LOAD	4.9	NO	23.4
BINARY (100 Sectors)	*BSAVE	7.3	18.4	28.7
	BLOAD	5.8	4.8	24.5
48K PROGRAM SPACE (With 3 Bufs avail)	APPLESOFT	36,352	NO	36,352
	INTEGER	36,352	NO	36,352
	BINARY	36,352	34,816	36,352
64K PROGRAM SPACE (With 4 Bufs avail)	APPLESOFT	46,592	32,256	35,756
	INTEGER	46,592	NO	35,756
	BINARY	46,592	41,728	35,756

*Add 5 seconds for Verify. Apple II, Applesoft & ProDOS are trademarks of Apple

Ten New DOS Commands

1. HIDOS moves DOS above 48K memory.
2. FRE makes ultra-fast garbage collection.
3. DATE stamp files. Clock or manual dating.
4. TLOAD speed loads all Text Files to mem.
5. TSAVE speed saves Text Files from memory.
6. TLIST lists all Text Files to screen/printer.
7. DUMP Binary/Ascii to screen or printer.
8. DISA disassembles Binary to screen/printer.
9. AL prints program Address & Length.
10. / is a one keystroke Catalog.

Identical Operation

All new commands operate identical to old DOS commands on the keyboard & in programs.

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Install DAVID-DOS II on your full disks in three seconds without touching the programs. Create bootable high-speed new disks with a Basic, Binary, or Exec Hello & 35/40 tracks. Create Data-Disks with 30 extra sectors.

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Key operated variable speed scrolling for TLIST, DUMP and DISA. Lower-case accepted on all commands. Catalog shows Free-Space. Automatic support of Integer or Applesoft Card in any slot, while in HIDOS or LODOS. Vendor license includes protection system.

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All DOS entry addresses have been preserved. DOS is same length and compatible with most software. David-Dos is fully copyable. Init areas were used for David-Dos. Works with all Apple IIs including IIe, IIc, Franklin & Basis with 48K/64K/128K & Corvus & Xebec Hard Disks. Complete documentation and many utilities are on the disk.

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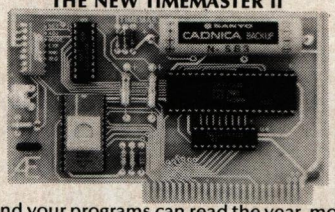
THE NEW TIMEMASTER II

Automatically date stamps files with PRO-DOS



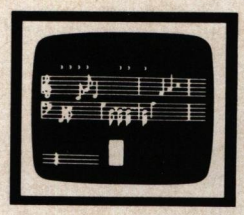
NEW 1984 DESIGN
An official PRO-DOS Clock

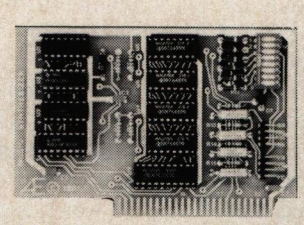
- Just plug it in and your programs can read the year, month, date, day, and time to 1 millisecond! The only clock with both year and ms.
- NiCad battery keeps the TIMEMASTER II running for over ten years.
- Full emulation of ALL other clocks. Yes, we emulate Brand A, Brand T, Brand P, Brand C, Brand S and Brand M too. It's easy for the TIMEMASTER to emulate other clocks, we just drop off features. That's why we can emulate others, but others CAN'T emulate us.
- The TIMEMASTER II will automatically emulate the correct clock card for the software you're using. You can also give the TIMEMASTER II a simple command to tell it which clock to emulate (but you'll like the Timemaster mode better). This is great for writing programs for those poor unfortunates that bought some other clock card.
- Basic, Machine Code, CP/M and Pascal software on 2 disks!
- Eight software controlled interrupts so you can execute two programs at the same time (many examples are included).
- On-board timer lets you time any interval up to 48 days long down to the nearest millisecond.

The TIMEMASTER II includes 2 disks with some really fantastic time oriented programs (over 40) including appointment book so you'll never forget to do anything again. Enter your appointments up to a year in advance then forget them. Plus DOS dater so it will automatically add the date when disk files are created or modified. The disk is over a $200.00 value alone—we give the software others sell. All software packages for business, data base management and communications are made to read the TIMEMASTER II. If you want the most powerful and the easiest to use clock for your Apple, you want a TIMEMASTER II.

PRICE $129.00

Super Music Synthesizer
Improved Hardware and Software





- Complete 16 voice music synthesizer on one card. Just plug it into your Apple, connect the audio cable (supplied) to your stereo, boot the disk supplied and you are ready to input and play songs.
- It's easy to program music with our compose software. You will start right away at inputting your favorite songs. The Hi-Res screen shows what you have entered in standard sheet music format.
- Now with new improved software for the easiest and the fastest music input system available anywhere.
- We give you lots of software. In addition to Compose and Play programs, 2 disks are filled with over 30 songs ready to play.
- Easy to program in Basic to generate complex sound effects. Now your games can have explosions, phaser zaps, train whistles, death cries. You name it, this card can do it.
- Four white noise generators which are great for sound effects.
- Plays music in true stereo as well as true discrete quadraphonic.
- Full control of attack, volume, decay, sustain and release.
- Will play songs written for ALF synthesizer (ALF software will not take advantage of all our card's features. Their software sounds the same in our synthesizer.)
- Our card will play notes from 30HZ to beyond human hearing.
- Automatic shutoff on power-up or if reset is pushed.
- Many many more features.

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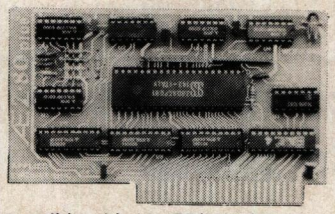
Z-80 PLUS!



- TOTALLY compatible with ALL CP/M software.
- The only Z-80 card with a special 2K "CP/M detector" chip.
- Fully compatible with microsoft disks (no pre-boot required).
- Specifically designed for high speed operation in the Apple IIe (runs just as fast in the II+ and Franklin).
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There used to be about a dozen 80 column cards for the Apple, now there's only ONE.

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- On-board 40/80 soft video switch with manual 40 column override
- Fully compatible with ALL Apple languages and software—there are NO exceptions.
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- All connections are made with standard video connectors.
- Both upper and lower case characters are standard.
- All new design (using a new Microprocessor based C.R.T. controller) for a beautiful razor sharp display.
- The VIEWMASTER incorporates all the features of all other 80 column cards, plus many new improvements.

	PRICE	BUILT IN SOFTSWITCH	SHIFT KEY SUPPORT	LOW POWER DESIGN	80 COLUMN HOME	7x9 DOT MATRIX	LIGHT PEN INPUTS	40 COLUMN OVERRIDE	INVERSE CHARACTERS
VIEWMASTER	**179**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**	**YES**
SUPRTERM	MORE	NO	YES	NO	NO	NO	NO	YES	YES
WIZARD80	MORE	NO	NO	NO	NO	YES	NO	YES	YES
VISION80	MORE	YES	YES	NO	NO	YES	NO	NO	NO
OMNIVISION	MORE	NO	YES	NO	NO	NO	NO	YES	YES
VIEWMAX80	MORE	YES	YES	NO	NO	YES	NO	NO	YES
SMARTERM	MORE	YES	YES	NO	NO	NO	YES	YES	NO
VIDEOTERM	MORE	NO	NO	YES	NO	YES	YES	NO	YES

The VIEWMASTER 80 works with all 80 column applications including CP/M, Pascal, WordStar, Format II, Easywriter, Apple Writer II, VisiCalc, and all others. The VIEWMASTER 80 is THE MOST compatible 80 column card you can buy at ANY price!

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- Documentation included, we show you how to use all 192K.

If you already have Apple's 64K card, just order the MEMORYMASTER IIe with 64K and use the 64K from your old board to give you a full 128K. (The board is fully socketed so you simply plug in more chips.)

MemoryMaster IIe with 128K	**$249**
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fast for beginners to follow, and the screen instructions don't specify clearly when to start the tape.

The Russian Disk, from Instant Software, is a top-flight introductory program, especially for travelers. It's the only foreign-language software I've seen that I'd consider using without supporting materials.

The first part is a primer on the Cyrillic alphabet, which isn't nearly as fearsome as you might expect. Once you're familiar with Cyrillic, the pronunciation of Russian words is straightforward.

The rest of the disk contains tutorial material on Russian words for common foods, drinks, places to eat, stores, and signs. It even has several short biographies of Soviet poets, scientists, and political leaders. The Russian Disk doesn't cover grammar, but who cares when it can help you find a piroshki shop in Leningrad?

Probably one of the preeminent language schools in the country is Brigham Young University in Provo, Utah. It is now marketing foreign-language software through Computer Translation, Inc. The company's first offering, Chinese Lessons, is a tutorial on written characters and their pronunciation.

THE RUSSIAN DISK DOESN'T COVER GRAMMAR, BUT WHO CARES WHEN IT CAN HELP YOU FIND A PIROSHKI SHOP IN LENINGRAD?

The program uses the Yale (rather than Pinyin) romanization system of Mandarin. The disk includes characters for food, transportation, family members, important signs, greetings, time and seasons, and the like.

Doing Business

OK, now that you know French, German, Spanish, Hebrew, Chinese, and Russian, where do you go from here? Probably back to your Apple, hoping to type reports and letters in your newly acquired tongue. But American Apples speak only English, don't they?

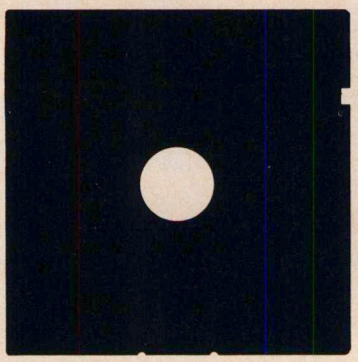
Yes and no. The Apple II needs some encouragement to become multilingual, but the Macintosh and Lisa have foreign characters built right in, and the Apple III can change fonts with just a few keystrokes.

Software publishers must contend with the fact that the character set for the II is stored in ROM and that the only ways to produce foreign-language characters are to change ROM chips or write your program in a graphics mode.

Some publishers have taken the latter route and created graphics-based text-editing programs. If you just want to play around with other languages, they might be marginally acceptable, but they're not the sort of programs you'd want to use day in and day out. They're rudimentary, awkward, and frustrating.

The only practical alternative—and it's not as extreme as it may sound—is to change ROM chips. A company called International Solutions has been licensed to use Apple's proprietary foreign-language chips, and it has put together a first-rate conversion package for the IIe and IIc called The Diplomat. (It's not available for the II Plus, unfortunately.)

Once the new parts are installed, you



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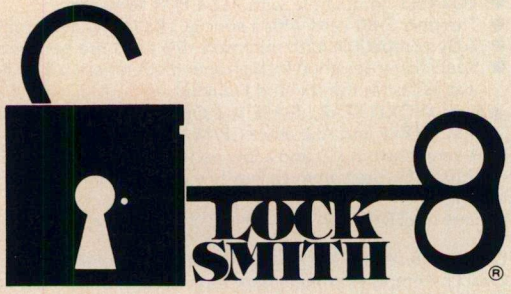

That's why you need

Even the highest quality diskettes are very delicate. They are easily damaged by magnetic fields, sharp objects, spilled sodapop, and peanut butter.

Locksmith backs up your data faster than ANY other backup utility available for the Apple. (Locksmith Version 5.0 can reliably backup a disk in as little as 8 seconds!)

Locksmith can backup programs which the manufacturer didn't intend for you to backup, (so-called protected software). Let's face it—the company that sold you your software yesterday may not be around tomorrow.

We are the SOURCE for Locksmith 5.0, it's our product. We are so totally committed to providing the best support for Locksmith that we hired the author of Locksmith and the entire Locksmith programming team to support Locksmith for you.

Locksmith currently comes with backup parameters for hundreds of "protected" programs.

Locksmith at $99.95—the best insurance value for your software investment.

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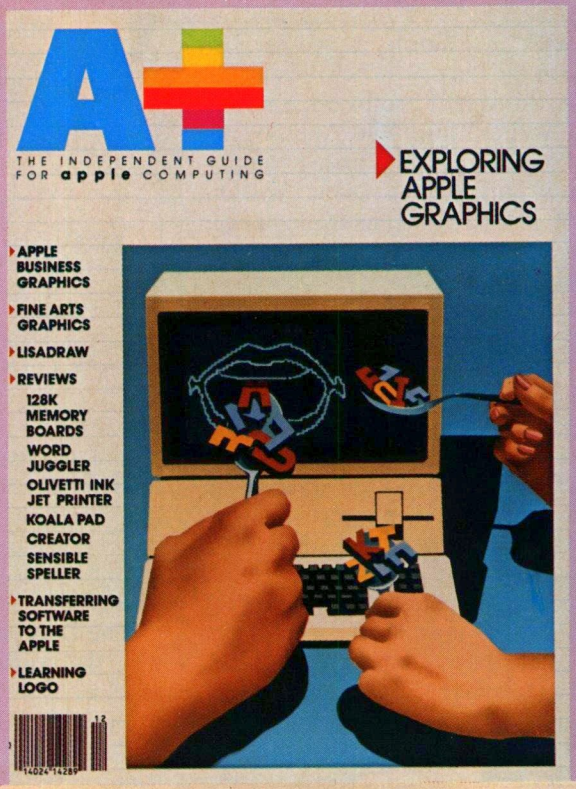

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can work in English or another language at the flip of a switch—using *any* text-based Apple II software. Yes, any. Apple Writer, Quick File, AppleWorks, WordStar, VisiCalc: Whether the program is formatted in DOS, ProDOS, CP/M, or whatever, The Diplomat can convert it into your chosen language, just like that.

Each package includes two ROM chips (keyboard and video/screen), new keycaps, an English/foreign switch, a chip puller, and even a keycap puller. If you enjoy soldering, you can do the conversion on a IIe yourself; the more squeamish will want to leave the job to a trained Apple serviceperson. The IIc version must be installed by a dealer. Note that since this conversion involves modification of the Apple's motherboard, it voids the computers' 90-day warranty.

The Diplomat is available in French, French Canadian, Western Spanish (North American), UK (British), Italian, German, Cyrillic (Russian), Hebrew, and Dvorak versions. (You're right, the last one's not a language—it's a nonstandard keyboard configuration—but it does require a different keyboard chip on the IIe.)

International Solutions also does special orders. The company has recently created custom Lithuanian, Polish, Swedish, and Norwegian chips. Prices range from $98 to $398, depending on which computer you have and which language you need.

YOU CAN WORK IN ENGLISH OR ANOTHER LANGUAGE AT THE FLIP OF A SWITCH.

The Diplomat works in conjunction with the Apple DMP or Imagewriter printers, as well as many other dot-matrix printers. It also works with daisy-wheel printers that support foreign languages. (For instance, the Apple Daisy Wheel Printer's print wheels include numerous foreign characters.)

In short, if you have an Apple IIe or IIc and want to work in a foreign language, The Diplomat is the way to go.

What if you have an Apple other than the II? Rejoice, because you can produce foreign characters even more easily.

The Apple III is a dream machine when it comes to foreign languages, because it gets characters from software, rather than from ROM. Several foreign-language fonts come on the latest System Utilities Data disk and are easy to load into programs such as Apple Writer III.

You may not even need them, though. You can access the foreign characters on the Apple Daisy Wheel Printer directly from Apple Writer II and III with control characters. For instance, Control-N V Control-O produces an *ñ*. You won't see it on your screen, but you'll get it from the printer.

The Macintosh and Lisa are even simpler. They have many foreign characters already built in, yours to use at the press of the Option key. Those characters will print out exactly as you see them when you use your Mac or Lisa with a dot-matrix printer. The Macintosh itself is also available in several international versions.

So experiment a bit and find out how your Apple can help bring the rest of the world a little closer. Happy conjugating—and *bonne chance*! ✚

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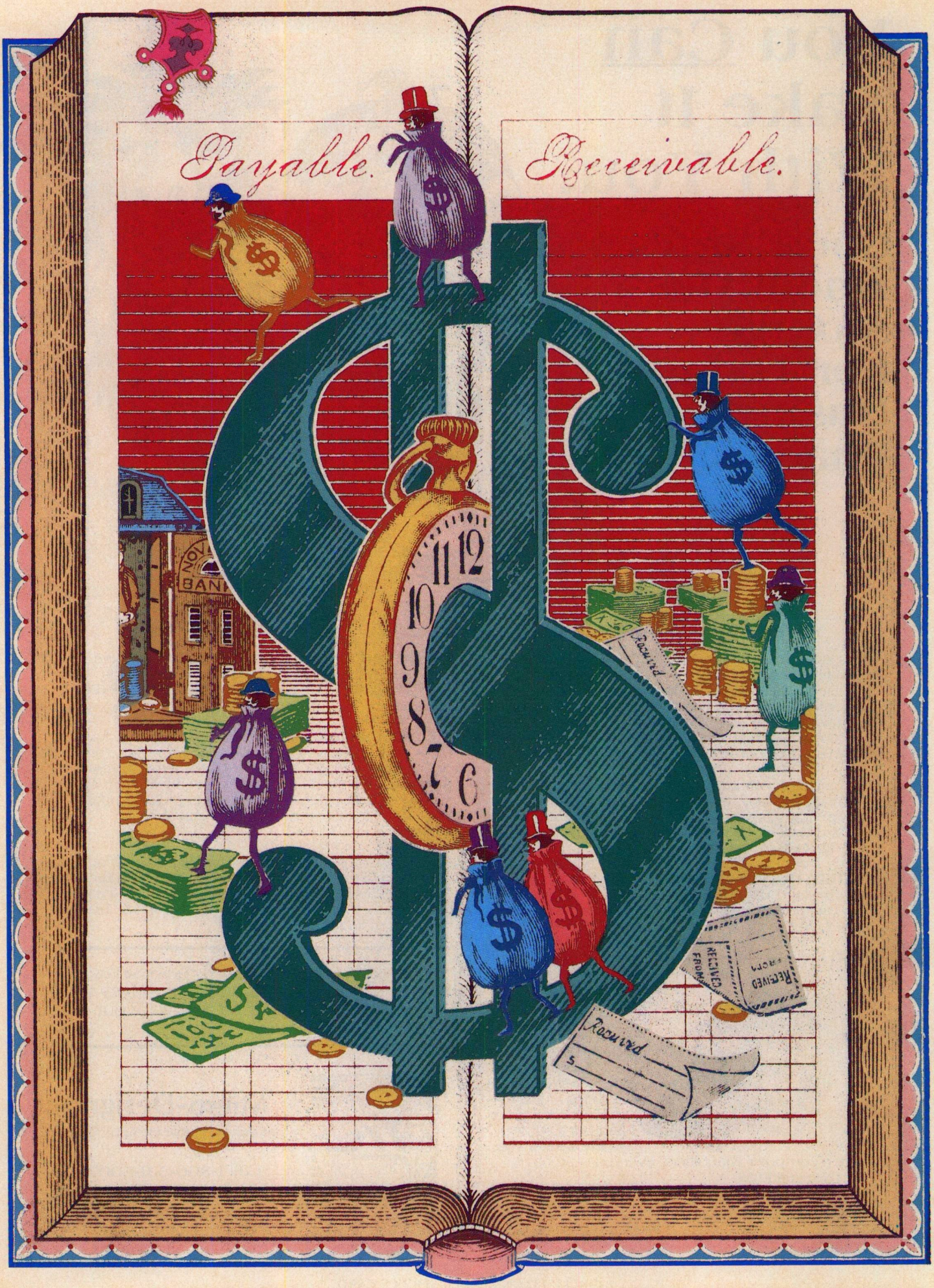
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BATTLING BILLING

BPI OPENS NEW AVENUES FOR YOUR ACCOUNTING PROCEDURES

BPI Systems has created an accounting package for various types of businesses with the potential to expand with companies as they grow. We reviewed BPI's four basic software packages, General Accounting, Accounts Payable, Accounts Receivable, and Payroll, on an Apple IIe with DOS 3.3, applying them to a sole proprietorship, a partnership, and a corporation.

Whether you have previous knowledge of computers or this is your first introduction to computers' possibilities, BPI will take you by the hand and lead you. We found that the basic requirement for success with these programs was a background in the fundamentals of accounting. These programs are set up for easy conversion of existing books. If you are just starting a business, however, you should read the documentation first and then determine how you want to set up your books, before converting to BPI.

General Accounting, Version 2.1

Each of the four programs we're looking at can stand on its own or combine with the others to form a complete financial system. The General Accounting program is a general-ledger package that contains accounts payable, accounts receivable, and payroll functions. The separate Accounts Payable, Accounts Receivable, and Payroll programs give you extra power for these functions if your needs are more complex than what the basic General Accounting package can handle.

The G/A program can produce a single income statement or multiple income statements for as many as ten departments, locations, or stores. It writes checks automatically, using information you record in the cash-disbursements journal about payments to employees, vendors, and other payees. If you have a small company with five to ten employees and accounts receivable and payable that don't require aging and other special treatment, then this program should be sufficient for your needs.

The first two chapters of the manual provide a brief introduction to the program and tell you how to get started. Chapters 3 and 4 give you examples of program operation.

BPI provides a demonstration disk with a full set of books for a small company, as well as worksheets for configuring and transferring your books to the system. During configuration, you should allow extra space between account numbers—e.g., account #1000 for your checking account and #1050 for your savings account. This approach will let you add additional accounts as your company expands.

Before entering your configuration, determine the number of monthly transactions you have laid out on your worksheets. BPI sets forth a formula in chapter 7, "Data Management," for computing the maximum number of entries you will be able to enter on one diskette for the month. It helps you evaluate whether the General Accounting package can handle your accounting capacity or if you need to work additionally with any of the other programs, which let you expand the accounts beyond the capacity of a single diskette.

Accounts Receivable

BPI gives you flexibility in dealing with your accounts receivable. With the Accounts Receivable program, you can close your accounting period weekly, biweekly, or monthly, and have the ability to post your accounts receivable daily and age them, adding finance charges where necessary.

The Accounts Receivable system allows you to enter 450 customer accounts and can hold up to 200 transactions in each account per billing period. You can create up to 100 repetitive charges—for deliveries, for instance—and configure 120 accounts, if you need to, so the program will transfer your Accounts Receivable totals in them to the general ledger.

In setting up your accounts, you are able to include pertinent data such as customer number, name, address, phone, type of customer account (A for regular accounts, P for regular ac-

JOHN CRAIG

counts with repetitive charges such as delivery, V for revolving accounts with minimum billing amount, and F for customers who pay a fixed amount each month.)

In evaluating our specific needs within Accounts Receivable, we could choose between the balance-forward and the open-item method. We chose the open-item method to facilitate audit procedures for late or partial payments. When you record your cash receipts with this method, the program requests the invoice number and has you note separately if finance charges are being paid. The program manual does advise you to be cautious in choosing your method, because changing methods can create serious problems.

You can specify two types of finance charges, with a rate and minimum balance for each, and can waive finance charges for specific customers.

The program enables you to compile a customer-account history and assign categories by type of sale, sales territory, or state. The system does not print financial reports by category, but it does allow you to print lists of customers and mailing addresses by category, so that you can print mailing labels or address lists.

On the invoice statements, you can print a one- or two-line message from your company. In addition to listing aging balances and payment dates, you can inform customers of upcoming sales or company closings for holidays, for instance.

The program manual does advise you to be cautious in choosing your method, because changing methods can create serious problems.

Payroll

The BPI Payroll system enables companies with up to 100 employees to process their payroll with the stand-alone system or to integrate it with the General Accounting system.

A demo disk introduces you to Payroll and gives you the opportunity to practice with the program, which is the case with all of the programs in the BPI package. A problem we encountered with the Payroll system was the inability to have the program function as anything but a practice program. The manual explained that we should mail the registration card; upon receipt, BPI would send us the updated tax tables we needed to make the program useful. The Payroll program covers three principal methods of compensation: hourly, salaried, and commissioned. You can specify three hourly rates—regular, time and a half, and double time—for each employee.

If you are using the Payroll program as a separate system without General Accounting, the time you spend on configuration will save you time during each pay period. For example, you may have four employees who work under different compensation structures: Employee 1 works on an hourly basis with different hours each week; employee 2 works 40 hours per week, paid by the hour; employee 3 is salaried, paid semi-monthly; and employee 4 is a commissioned salesman paid monthly.

At the close of your weekly payroll period, you can "manually" review each employee for the period or select an individual employee from the Method of Payment menu and enter any necessary information such as the number of hours worked. During payroll config-

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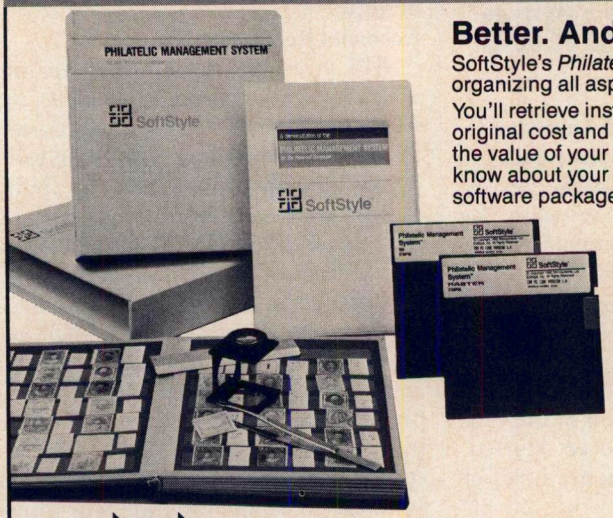

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uration, you've already entered wage information and types of deductions besides payroll taxes (union dues, IRA's, medical insurance, city taxes, and the like). After you enter the hourly employees' hours for the payroll period, the computer asks if the workers have taken any sick leave or vacation time and then automatically computes taxes and shows net pay. You can then return to the Method of Payment menu and select automatic processing for the employees who are paid weekly. The program processes their payroll and distributes it to the appropriate salary expense accounts.

You can choose to pay the employees manually or have the computer print the checks. You then close the pay period and post the employees' earnings to their payroll accounts, which maintain the balances necessary for quarterly taxes, as well as SUTA and FUTA taxes and W-2 forms preparation at year end.

The following week you process employees 1–3, with the only requirement being that you process employee 1 for hours and note if employee 2 or 3 had sick leave, vacation, or expense reimbursement. You then follow the procedure described above.

At the end of the month, you process employee 1 for his hours and employee 4 for his total sales, determining his salary based on 15% of sales. The computer then computes all salaries for employees 1–4, distributes the payroll to the salary expense accounts, and posts the amount earned to the employee payroll accounts in preparation for the monthly close.

Your period payroll reports will enable you to determine productive vs. nonproductive time (sick leave, vacation, and so on) and summarizes salary expenses by department.

If you are combining Payroll with General Accounting, you should back up your disk before you transfer your net payroll data to the general ledger, to prevent accidental loss of information. The Payroll Update Service ($100) available with this program provides you with updated tax-table information whenever payroll tax changes affect federal, state, or certain local taxes.

One thing we recommend with this particular program is a third disk or, preferably, a hard-disk drive. Shuffling disks around gets tiresome and can lead to mistakes.

Accounts Payable

Cash discounts, payment dates, and

BPI ACCOUNTING ON OTHER APPLES

General Accounting, Accounts Payable, Accounts Receivable, and Payroll are available for the following Apples, in addition to the IIe with DOS 3.3:

Apple II Plus with 48K RAM and two disk drives: $395 per program

Apple IIe with ProDOS, 64K RAM, and two disk drives: $425 per program (distributed solely by Apple Computer)

Apple III with 256K RAM and a hard disk: $495 per program

Any Lisa with one full megabyte of RAM and a hard disk: $595 per program

The following extra accounting programs are available for the Apple II Plus:

Inventory Control	$395
Job Cost	$595
Time Accounting	$395
Business Analyst	$195
Church Management	$495

Also available (from Apple) for the Apple IIe with ProDOS:

Inventory Control	$425
Business Analyst	$195

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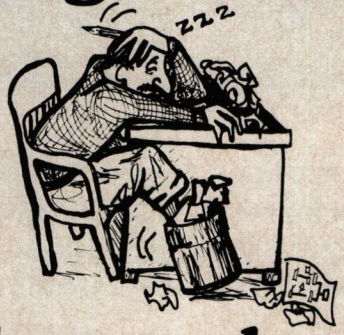

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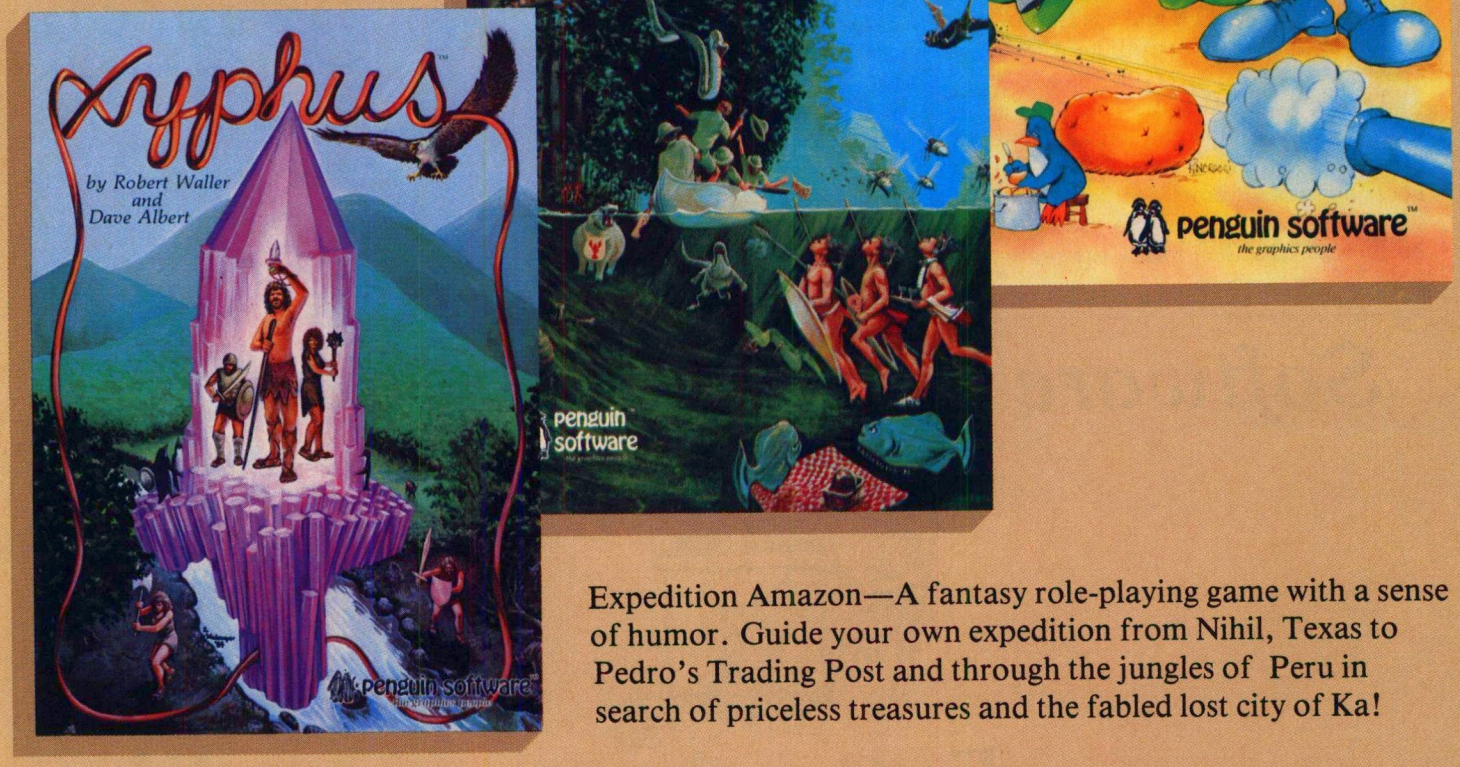

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cash-flow requirements: These three factors can give an accounts-payable department headaches. The BPI Accounts Payable program allows you to assign a voucher reference to each invoice with which you can track the distribution of that invoice to various general-ledger accounts.

You can also break down invoices into different amounts with separate voucher numbers if partial payments with different due dates are to be made. The voucher number allows you to recall an invoice if you need to note return of defective merchandise or a change in discount, final payment date, or credit terms. You can have the computer pay the entire bill on its discount date or final due date or hold the payment until completion. You can also enter comments, when entering an invoice, that are for internal use only and do not appear on the check stub.

After you've entered an invoice amount, the program takes the credit information entered previously for this particular vendor (e.g., discount and payment terms) and computes the net invoice. After approval, it presents the expense accounts normally associated with the vendor, and you can either distribute the charges to those accounts or enter other expense accounts. The system holds the information until you are ready to actually print checks and then automatically debits the appropriate accounts and credits the appropriate checkbook.

The Accounts Payable program allows you to designate different cash accounts when paying invoices. For example, laws in certain states require insurance companies to maintain separate checking accounts for premiums/commissions received and for operating expenses. The Accounts Payable program, with its multiple checking accounts, fulfills these sorts of requirements.

You will be able to produce month-end financial statements on the afternoon of the last day of the month.

During your accounting period, you can request a detailed vendor analysis that includes a complete vendor list of names and addresses, the number of days each vendor allows for payment, discount days allowed, information on year-to-date purchases and payment, the high balance for the year, and current balance of payables, as well as the number of checks written to date in the year.

The vendor-analysis reports include your regular vendors only, not casual vendors that you purchase from only occasionally. You can request such an analysis of any individual vendor at any time during your accounting period or have the system print all regular vendors.

You can also ask for a printout called a Vendor Query, which provides a detailed list for a specific vendor of all outstanding invoices, credit memos, undistributed payments (due date upcoming), and the total balance due that vendor.

An excellent summary at the end of the practice section details each step.

By following checklist procedures at the close of each accounting period, you will be able to produce month-end financial statements on the afternoon of the last day of the month. You will also be able to begin the next month's accounting on the first day of the accounting period, rather than two or three

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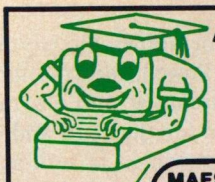

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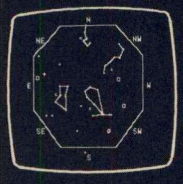

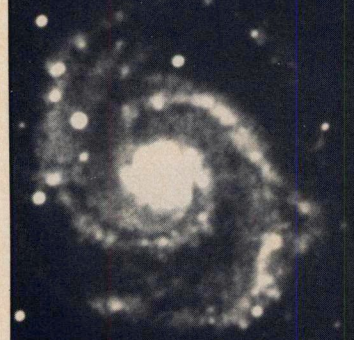

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PRODUCT INFORMATION

BPI Accounting Package
BPI Systems, Inc.
3423 Guadalupe
Austin, TX 78707
(512) 454-2801
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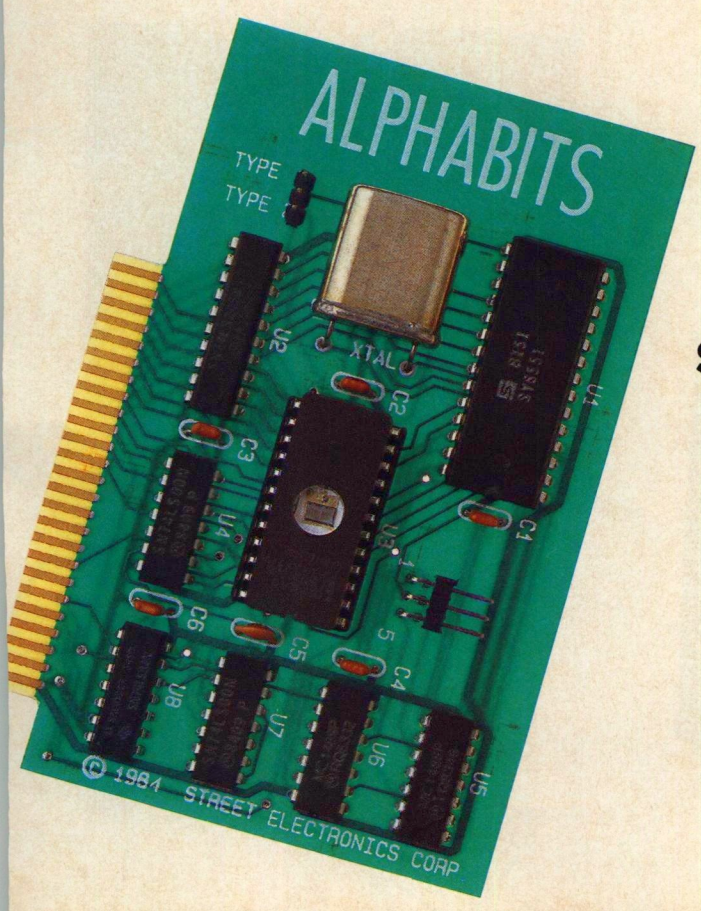

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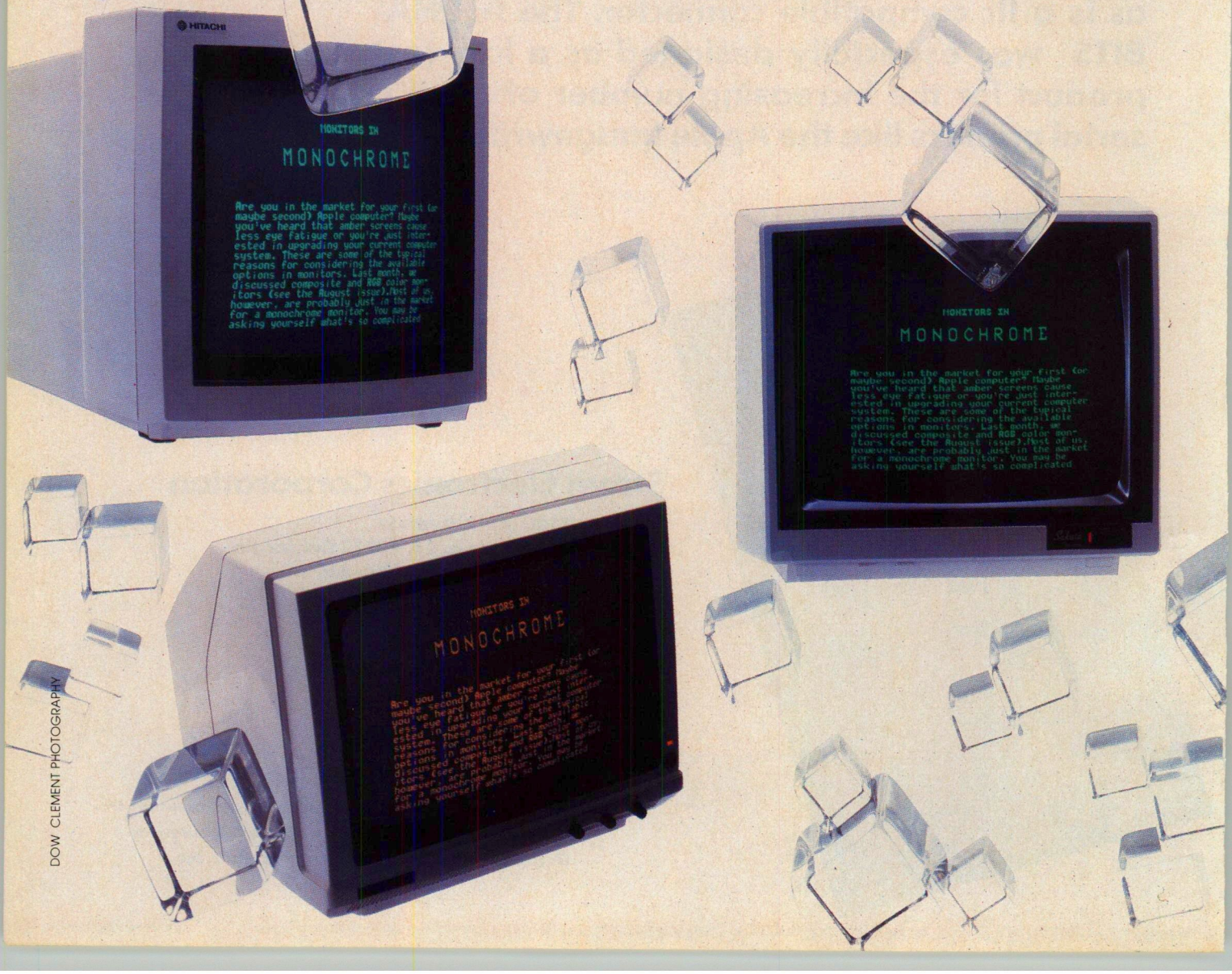
MONITORS IN MONOCHROME

SCREENING THE MARKET FOR THE PERFECT SCREEN

Are you in the market for your first (or maybe second) Apple computer? Maybe you've heard that amber screens cause less eye fatigue, or you're just interested in upgrading your current computer system. These are some of the typical reasons for considering the available options in monitors. Last month, we discussed composite and RGB color monitors (see the August issue, pages 56–60). Most of us, however, are probably just in the market for a monochrome monitor.

You may be asking yourself what's so complicated about shopping for a monochrome monitor. Well, nothing is complicated about it, but you should consider certain factors that may influence your decision. In this article we'll look at why a monochrome monitor may be the best choice for you.

To help you judge the quality of a monitor, we'll describe how images are produced on a monochrome screen. Next we'll take a close look at seven



DOW CLEMENT PHOTOGRAPHY

monochrome monitors—the Amdek 300A, Apple Monitor II, Gorilla (in both green and amber), Hitachi MM1218, Sakata SG-1000, and Taxan KX-121. Finally, we'll discuss how to shop for a quality monitor, and will include in this article a comparison chart of some of the more affordable monochrome monitors.

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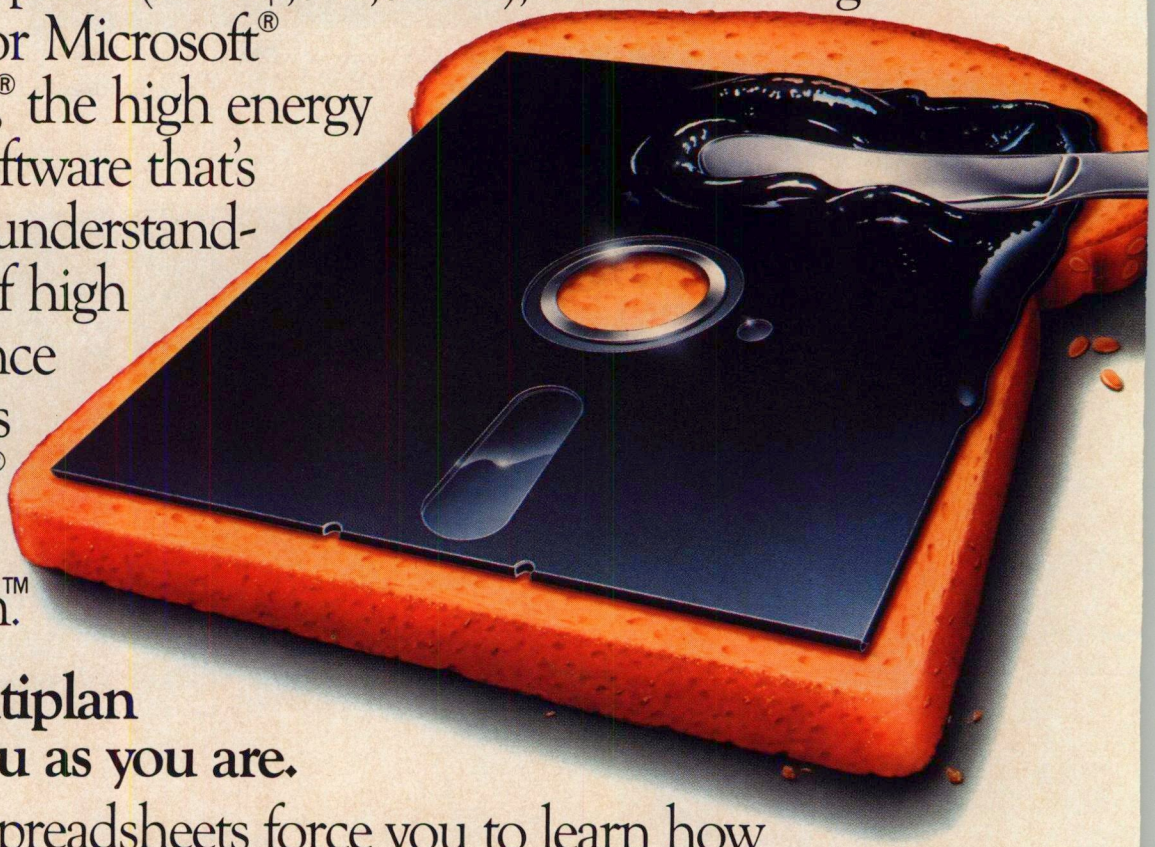

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Monochrome or Color?

We're used to seeing our world in "living color" and are conditioned to viewing color on televisions and at the movies. For these reasons alone, you may be tempted to purchase a color monitor for your Apple. A color monitor may not be the best choice, based on your computing needs and finances, though. Color monitors are generally more expensive than monochrome monitors, and some of them (the RGB type) may require the purchase of an additional card to be compatible with your computer, unless you have an Apple III. Consider these questions:

- Are most of your computer applications word processing, spreadsheet, or data-management software?
- Do you rarely display or produce graphics on your system?
- Is cost an important consideration?

If you answered "yes" to at least two questions, you probably need nothing more than a monochrome monitor. If your heart is set on a color monitor, however, be aware that only the more expensive RGB type can display 80-column text reasonably clearly. You might even consider purchasing an inexpensive color monitor as well as a monochrome monitor and switch back and forth to meet your needs.

How do they work? When you shop for a monitor, it helps to know a little bit about how monitors produce images in order to be able to judge whether you're getting a good one. Inside a monochrome monitor, a high-speed beam of electrons scans across the screen, which is coated with phosphor. This electron beam pulses to make some of the phosphors glow for a fraction of a second, while leaving others black.

These individual on-or-off phosphors are called *pixels* (a contraction of *picture element*) and produce the letters, numbers, symbols, and graphics that you see on the screen. Because the light the phosphors produce dies out in less than a second, the electron beam must scan over the screen many times per second in order to "refresh" the phosphors (maintain the image on the screen) without giving the appearance of a flickering character or screen. The number of pixels that the monitor uses to display each character on the screen

Don't be too quick to write off this part of your Apple that demands so much of your attention whenever you use your computer.

determines the resolution or quality of a picture. The greater the number of pixels that can form a letter or number, the more solid this character will appear.

Another characteristic of a monitor you may hear about is its bandwidth. Bandwidth is the rate at which the monitor can accept and display data from your Apple. Like the number of pixels, bandwidth also determines resolution. The faster the monitor receives and displays data, the sharper the images will appear.

Don't assume that the monitor with the highest resolution is the best monitor for you. This monitor may cost hundreds of dollars more than another monitor that would be just as adequate for your needs. Because higher resolution demands more speed and memory from your computer, you should try to match the bandwidth of the monitor to the bandwidth of your Apple. If you do so, you will get the best service from your computer system without spending more than necessary for the monitor.

Some Monitor Options

Now that you can hold your own with the salespeople at the computer store, let's look at a sample of monochrome monitors. For this article we examined seven monitors, using an Apple IIe with an 80-column card. These monitors represent a few of the many options now available.

You may feel that a monitor is a monitor, and that it doesn't merit much discussion, but don't be too quick to write off this part of your Apple that demands so much of your attention whenever you use your computer.

Now we'll take a look at each monitor's physical features, controls/adjustments, and picture quality. The comparison chart which is included in this article gives each monitor's vital statistics.

Amdek 300A

Although we examined an amber-screen monitor (amber characters on a black background), this monitor also comes in green. The Amdek 300A is a fairly heavy monochrome monitor at 17 pounds and has its brightness, contrast, and power controls conveniently located on the front of the monitor. The screen, which is nonglare and mounted at a pretilted angle, has good picture quality. Characters in inverse video (dark characters on a light background) appear particularly sharp. This monitor has no visible phosphor tracing or smearing that can occur on some monitors when the cursor moves rapidly across the screen.

Apple Monitor II

This relatively new addition to the Apple II series of products is available in green. Designed to fit well on top of your Apple computer, the Apple Monitor II has a conveniently located handle for easy transport.

Apple uses international symbols to identify the control knobs and connection points on this monitor. Unfortunately, these symbols may initially be more a source of confusion than of help. The biggest selling point for the Apple Monitor II is the easily tiltable screen, which allows you to select a position that's comfortable for your line of vision. This feature is great for those of us who share our computer with someone who's not the same height.

The picture quality is good—definitely better than that of the Apple III monitor we are used to. As you might expect from Apple, the documentation is excellent, and it even includes some helpful hints on how to prevent eyestrain when you work for long periods of time.

Gorilla

How about a Gorilla for your Apple? We looked at both the amber and green versions of this monitor, manufactured by Leading Edge Products. Both options are exactly the same, except for the screen color. Frequently used adjustment knobs are located in the front, and you can manipulate the controls in the back by hand, without any special tools. If you turn up the brightness too high, the background loses its black color or contrast. A tilt bracket under the monitor allows you to choose one of two viewing angles, no tilt or quite a bit of upward tilt.

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▸ MONOCHROME MONITORS

MANUFACTURER	MODEL	PRICE ($)	COLORS	DISPLAY AREA	SCREEN PIXELS	CHARACTER	BANDWIDTH IN MEGAHERTZ	CARD #
Amdek	300	179/199	green/amber	12" diag.	960 X 800	80 X 24	18	470
Apple Computer	Monitor II	229	green/amber	12" diag.	480 X 192	80 X 24	18	471
Conrac	ENAC9	670	green/white	9" diag.	600 V	80 X 25	10	472
	ENAC12	750	green/white	12" diag.	600 V	80 X 25	10	473
Electrohome	EVM920	546	green	9" diag.	750 V	80 X 24	18	474
	EVM1220	619	green	12" diag.	800 V	80 X 24	18	475
Hitachi	MM1218	223	green	12" diag.	720 X 240	80 X 24	15	476
Leading Edge	Gorilla	99	green/amber	12" diag.	800 V	80 X 25	18	477
NEC Home Electronics	JB902A	189	green	9" diag.	700 X 230	80 X 25	20	478
	JB1201MA	199	green	9" diag.	700 X 230	80 X 25	20	479
	JB1205MA	199	amber	12" diag.	800 X 230	80 X 25	20	480
	JB1260MA	149	green	12" diag.	600 X 230	80 X 25	15	481
	JB1410P2A	249	white	14" diag.	800 X 400	80 X 25	23	482
Sakata	SG-1000	129	green	12" diag.	900 X 800	80 X 25	18	483
Sanyo Electric	DM8012CX	198	white	12" diag.	800 H	80 X 24	18	484
	DM8112CX	198	green	12" diag.	800 H	80 X 24	18	485
	DM8212CX	198	amber	12" diag.	800 H	80 X 24	18	486
	DM9012	219	white	12" diag.	800 H	80 X 24	18	487
	DM9112	219	green	12" diag.	800 H	80 X 24	18	488
	DM9212	219	amber	12" diag.	800 H	80 X 24	18	489
Sony	PVM91	345	white	9" diag.	800 H	80 X 24	10	490
	CPD120	375	green	12" diag.	640 X 400	80 X 24	10	491
Taxan	KX-121	219	green/amber	12" diag.	1000 X 360	80 X 25	20	492
	KX-122	229	amber	12" diag.	1000 X 360	80 X 25	20	493
USI	Pi-1	199	green	9" diag.	1000 X 480	40 X 24	20	494
	Pi-2	199	green	12" diag.	800 X 480	80 X 24	20	495
	Pi-3	225	amber	12" diag.	800 X 480	80 X 24	20	496
	Pi-4	225	amber	9" diag.	1000 X 480	40 X 24	20	497
Zenith	ZVM122	169	amber	12" diag.	800 V	80 X 25	15	498
	ZVM123	149	green	12" diag.	800 V	80 X 25	15	499

**For more information on any of these products, circle the corresponding card number on the Reader Service Card in this issue.*

The Gorillas in both colors perform adequately as far as picture quality and phosphor tracing are concerned, although you can see some excess glossing around the fringes of the displayed characters. All in all, if price is one of your major considerations in purchasing a monitor, a Gorilla at about $100 is not a bad choice.

Hitachi MM1218

The Hitachi is another monitor (in green only) whose screen has a preset tilt. The resolution is good, although the characters appear a little more grainy (meaning the individual pixels are more noticeable) than those of some of the other monitors. Little phosphor tracing is evident. Unfortunately, the monitor we looked at lacked an owner's manual and, thus, a warranty.

Sakata SG-1000

At first glance, the Sakata SG-1000 looks like a cute little TV sitting on your computer, although its display size isn't noticeably smaller than that of the other monitors. The cabinet surrounding the monitor turns out to be contoured more closely to the CRT (cathode-ray tube).

The Sakata, like most monitors, comes only with a green screen, which is pretilted and nonglare. Additionally, the resolution is fairly good, and a second video jack allows two monitors to run in parallel.

Taxan KX-121

The Taxan monitor comes in either green or amber and has reasonably good picture quality. In addition, the color of the monitor's cabinet makes the Taxan one of the few monitors that actually looks like it belongs aesthetically with the Apple computers. The handle designed into the cabinet is a nice addition. Unlike those of many monitors, the controls are all adjustable without the need for any additional tools. The Taxan has some nice advantages for a price of less than $250.

On to the Computer Stores

Last month, we gave you some useful (we hope) tips on shopping for a good monitor. Without repeating them here, we'll simply reiterate that the most important consideration to keep in mind is your own viewing comfort. If you feel good about a monitor, you can probably look forward to many productive years with it. Happy shopping! ✚

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Amdek Corporation
2201 Lively Blvd.
Elk Grove Village, IL 60007
(312) 364-1180

Apple Computer, Inc.
20525 Mariani Avenue
Cupertino, CA 95014
(408) 996-1010

Convac Corp.
600 North Rimsdale Avenue
Covina, CA 91722
(213) 966-3511

Electrohome (USA) Ltd.
250 Wales Avenue
Tonawanda, NY 14150
(716) 694-3332

Hitachi America
401 West Artesia Blvd.
Compton, CA 90220
(213) 537-8383

Leading Edge Products, Inc.
225 Turnpike Street
Canton, MA 02021
(800) 343-6833

NEC Home Electronics
Personal Computer Division
1401 Estes Avenue
Elk Grove Village, IL 60007
(312) 228-5900

Sakata U.S.A. Corp.
651 Bonnie Lane
Elk Grove Village, IL 60007
(800) 323-6647

Sanyo Electic, Inc.
Communications Products Division
1200 West Artesia Blvd.
Compton, CA 90220
(213) 537-5830

Sony Video Communications
Sony Drive
Park Ridge, NJ 07656
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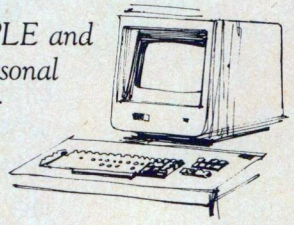

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BY JOHN UNGER ZUSSMAN

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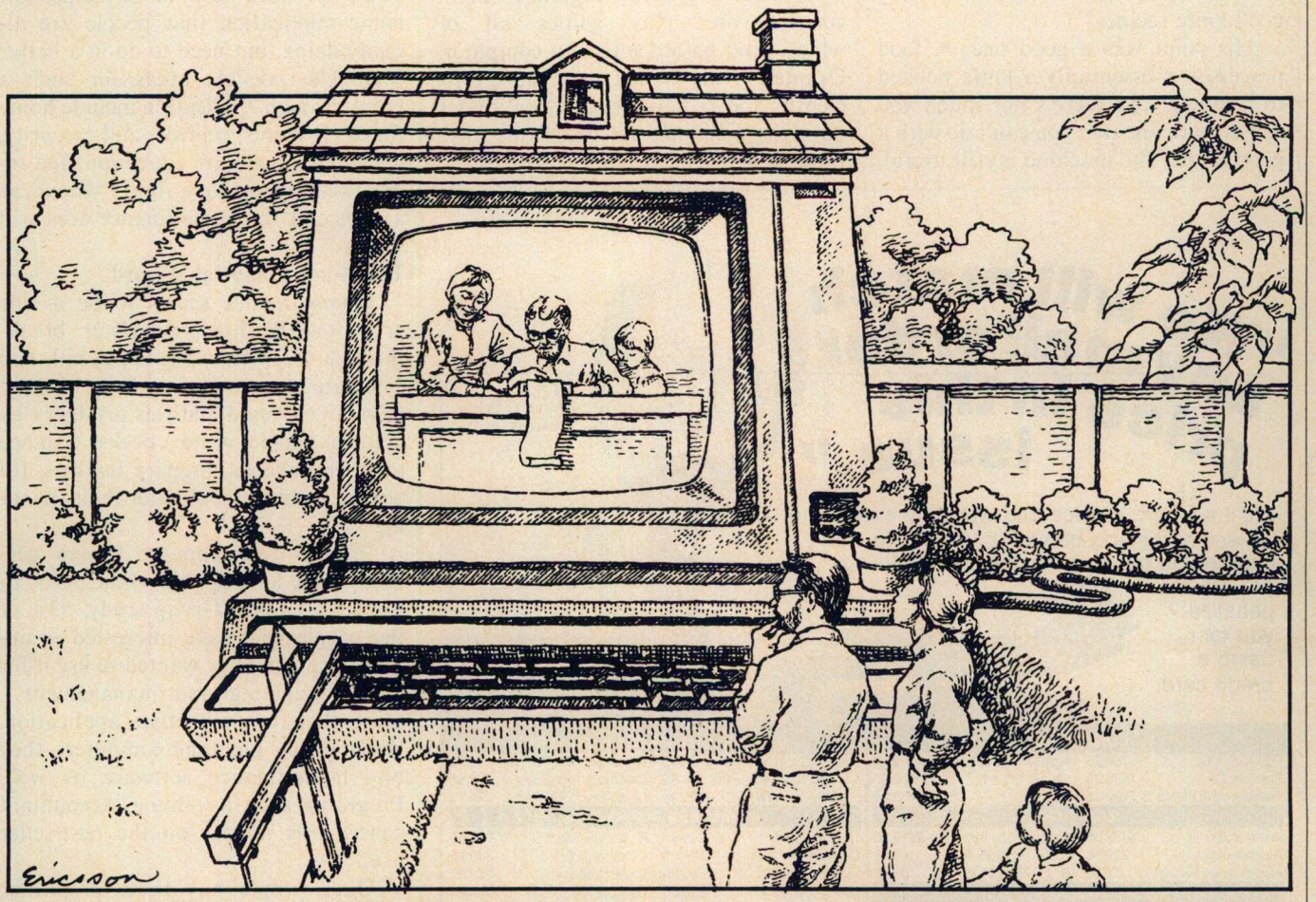

MYTHS OF HOME COMPUTING

A couple of years ago, humorist David Lachenbruch compiled a list of the things people did with their home computers, in decreasing order of popularity:

1. Play Pac-Man.

That was it. No home finance, no recipe index, no letter writing. And, although by now the list might bear some expansion (Choplifter, at least, should be added), Lachenbruch's point is still well taken. The home computer is still, as Atari founder Nolan Bushnell once put it, "a tremendous solution looking for a problem."

The VisiCalc Phenomenon

We need a VisiCalc for home computers. By this assertion I don't mean that people should be using spreadsheet programs such as VisiCalc to balance their personal checkbook on a home computer.

But VisiCalc was the software that legitimized personal computers in business. More than any other program, it was the key to the personal-computer revolution. Corporate managers and small-business owners bought personal computers specifically to run VisiCalc.

We need an application that's so useful that people will go out and buy a home computer just to run it.

Perhaps I should say, then, that we need something *equivalent* to VisiCalc for home computers. We need an application that's so useful that people will go out and buy a home computer just to run it.

Clearly, such a program hasn't appeared yet. If it had, Texas Instruments wouldn't have fled the home-computer business, Atari wouldn't have laid off half its work force, and IBM's and Coleco's warehouses wouldn't still be full of PCjrs and Adams. There are plenty of computers in homes, but the home-computer *revolution* that will make computers in homes as common as telephones and TVs still hasn't hit.

What kind of breakthrough program can open up the home-computer market? I think we can safely say that it won't be VisiCalc or another spreadsheet program. The needs of home- and business-computer users are vastly different. To paraphrase Edward Heite, balancing a checkbook with a spreadsheet program is like hauling firewood

CELESTE ERICSSON

in a Rolls Royce.

Remember the food-processor craze of the late 70s? Cuisinarts were selling like hotcakes, and the bookstores were full of titles such as *The Joy of Processing*. A noted chef was asked if he knew any good food-processor recipes. "Don't kid me," he scoffed. "Do you know any good knife recipes?"

His point was a good one. A food processor is essentially a knife hooked to a motor, and there's not much you can do with one that you can't do with a good knife. The machine is still useful, though, because it makes all those "knife recipes" far simpler and faster.

It's the same with computers. I use my computer for both home and business functions. Yet *I don't do anything with my computer that I didn't do without one.* I write, outline, store notes, draw graphs, organize, plan, communicate, play games—all of which I did before getting a computer. Granted, I do them faster, more efficiently, and (I hope) better now that I have the machine, but I don't do anything new.

Actually, there *is* one important thing people do only with computers: write programs. In other words, they instruct the computer to do new tasks—which, more than likely, they did by hand before they got the computer. You get the idea.

So we need to find an important home application that people are already doing, but need to do in a better way. The possible areas for such a breakthrough application include home finance, home control and security, telecommunications, education, and recreation. Sounds easy, right? Wrong, as a glance at the home-finance area will show.

The Home Financial Wizard

Home finance seems to be a ripe area for the home-computer breakthrough. Everybody has to pay bills and calculate taxes, and everybody hates it. Computers could end this drudgery by helping people write checks, balance their checkbooks, prepare budgets, fill out tax forms, and monitor their spending.

Prospective computer buyers certainly hope for help with these tasks. In a recent Yankee Group study, 53% of the people who were interested in acquiring a computer wanted to use it for home budgeting and management—more than for any other application. When people buy their computers, they buy home-finance software as well. Programs such as Home Accountant consistently appear on the best-seller lists.

Once people buy these programs, however, they don't seem to *use* them much. When the Yankee Group interviewed people who had already purchased a computer, only 27% actually used it for home finance.

Why so few? Some recent market research conducted by Intuit, a Palo Alto, California, software company just entering this market, provides some clues. Intuit asked members of 200 households—not necessarily computer owners—whether, and how often, they performed various financial tasks.

Paying the Bills

Three activities showed up consistently in these reports: paying bills, reconciling checkbooks, and adding up checks. Almost all households did these things, usually once a month or more.

Other financial tasks were performed much less often. Fewer than a quarter of the families prepared household balance sheets or totaled their expenses. Fewer than 10% prepared a written household budget or compared

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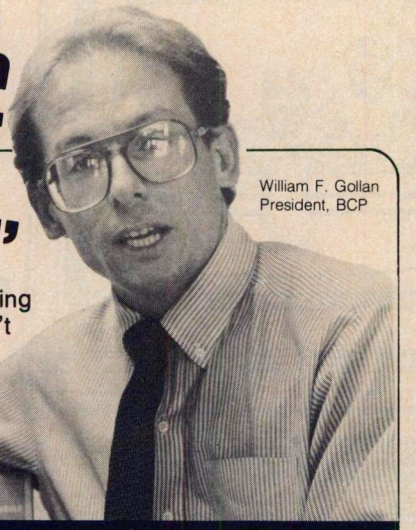

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actual expenses to budgeted amounts. None prepared graphs of their financial activity.

Notice that these less popular tasks are all *elective*, not required like those in the first group. People know they ought to do these things; most plan to get around to it one of these days—but when they have a choice about financial chores, they usually choose to ignore them.

Now most home-finance programs emphasize precisely these elective activities. So people figure that, with the help of their computer, they'll finally be able to do these tedious chores. When they find out how much work it is to enter and maintain the data, though, they lose interest. Since they don't really *need* a nice, neat pie chart of their expense categories, they won't go to much trouble to prepare one.

Home-finance applications may be a good *excuse* for people to buy a home computer, when they really do so for other reasons.

The moral of this story, again, is that people like their new bottles to contain old wine. If they didn't budget before they bought the computer, they won't budget afterwards either.

Ironically, most people don't even use these programs to do common financial tasks such as writing checks. That's because the programs often tie their functions together and require that you set up a complete accounting system before doing anything. Writing checks by computer turns out to be more trouble than doing it by hand. So, with a sigh, they consign the home-finance program to the top shelf and try to master Zork III once again.

Some Solutions, No Breakthroughs

I've recently seen two programs that might get people to actually use their home computers for financial applications. Although both were released initially for the IBM PC, Apple versions are forthcoming.

Intuit has followed up on its market research, described above, by introducing a product that performs only the three tasks that people actually *do*. With this product, called Quicken, you can print checks, balance your checkbook, and find and total checks within categories. Because it's so simple, Quicken really is quick—and easy enough to compete favorably with doing the tasks by hand.

Quicken isn't the breakthrough product, the VisiCalc of home computers, though—people won't buy a computer just to write checks and balance their checkbook—but it may do what no home-finance program has done before it: get used.

A Westport, Connecticut, firm called Micro Education Corporation of America (MECA) has taken a different tack. MECA recruited Andrew Tobias, a leading financial writer, to design a complete home-finance package. The program, called Managing Your Money, contains "chapters" on budgeting, writing and reconciling checks, estimating your income tax and mortality, planning your insurance, managing your portfolio, and calculating your net worth. It also contains a reminder pad and a financial calculator.

These functions are tied together—but loosely enough to be practical. For example, if you maintain an investment portfolio, the program can automatically enter the totals onto your personal balance sheet. You can also construct the balance sheet without doing the portfolio, entering your investment figures directly from the keyboard. I suspect that people may start by using the basic checkbook functions and then be drawn into the more complex tasks.

If anyone can minimize the drudgery of performing some of these chores, Tobias can. He's the author of the highly successful book *The Only Investment Guide You'll Ever Need*. Besides giving good advice, he's an engaging, witty writer. For example, he dedicated his book "to my broker—even if he has, from time to time, made me just that."

Excuses, Excuses

Programs such as Quicken and Managing Your Money may help people manage their finances on home computers, but since people try to minimize the time they spend on financial affairs, I don't think they'll buy computers just to run home-finance programs. Unlike VisiCalc, these programs won't single-handedly usher in the home-computer revolution.

On the other hand, home-finance applications may be a good *excuse* for people to buy a home computer, when they really do so for other reasons. In my next column (in the November issue), I'll examine some of those other reasons to buy a home computer. +

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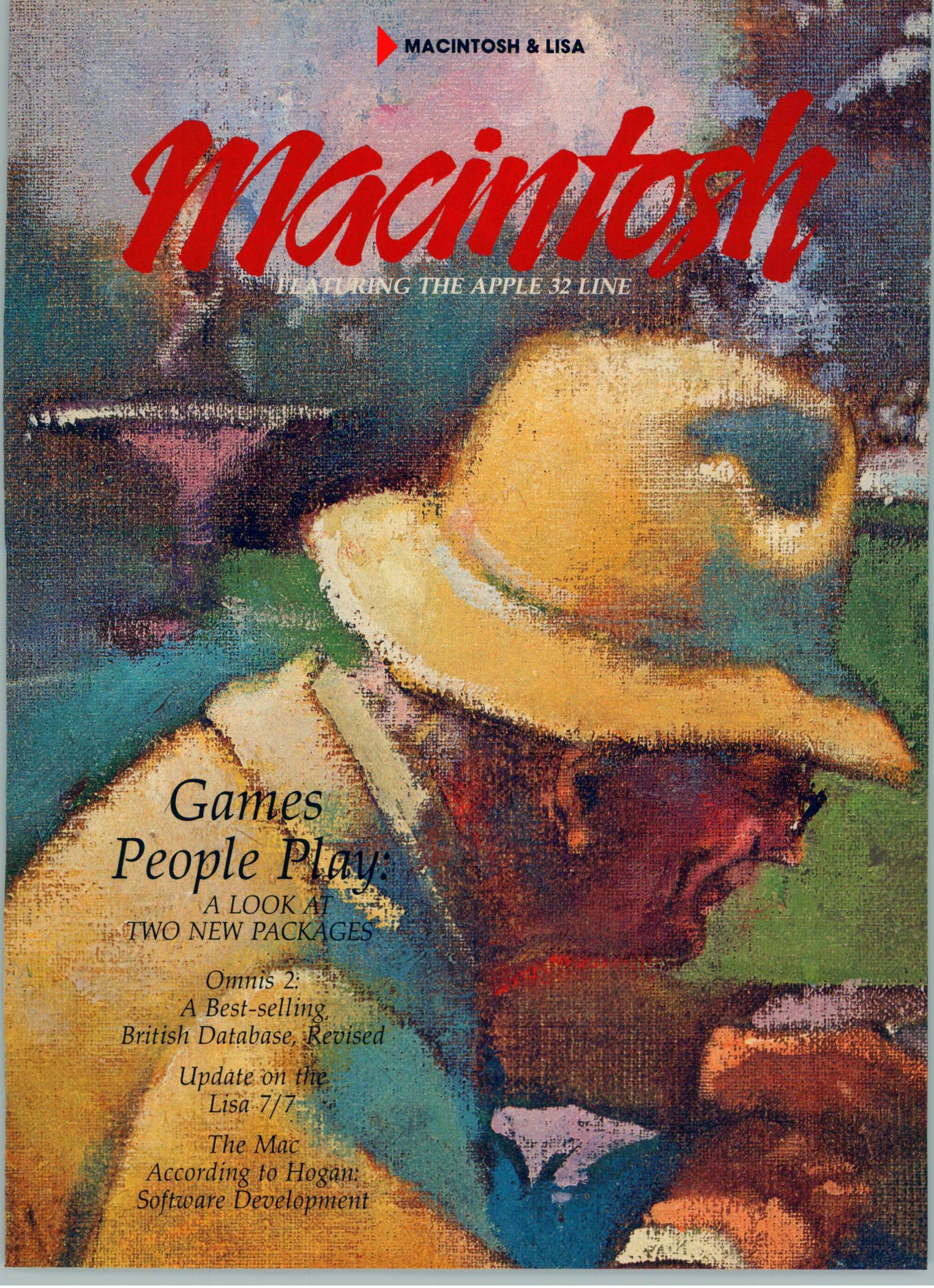

Games People Play:

A LOOK AT TWO NEW PACKAGES

Omnis 2: A Best-selling British Database, Revised

Update on the Lisa 7/7

The Mac According to Hogan: Software Development

New Games Mac People Play

Transylvania and Millionaire

The proposition that computing on the Macintosh ought to be simple, powerful, and fun gets a big boost from the first pair of games released to run on the Mac.

The authors of Transylvania (a graphics adventure) and Millionaire (a stock-market game) have done more than just bring to market a couple of challenging games. They have also demonstrated that Macintosh redefines the term "ease of use."

Damsel in Distress

Slip the Transylvania disk into the Mac. Double-click the document file, and the game's title page appears, divided into three sections.

"Velcome to Transylvania! Von't you please sign the guest register?" you are bidden. You enter your name at the keyboard and press Return. "And your next of kin?" it asks, menacingly.

You see a picture of a tree stump in the upper left quarter of the screen, below which is a N-E-S-W compass that you can activate with a click of the mouse button; selecting a direction brings a new image into the picture window.

Your mission is to find and rescue a damsel in distress. Beyond that, you're on your own. You wander through a forest, exploring and collecting odd items as you go. Of course, this wouldn't be Transylvania without a werewolf, or a vampire, or or—but that would be telling too much.

The text scrolls neatly up the right side of the screen, the game's message in Mac's Venice font, your own commands in New York. This typographical difference permits a clear distinction between lines of text. You communicate with the computer by typing simple two-word commands;

FRANCIS LIVINGSTON

the program replies with text or graphic routines from a 300-word vocabulary.

The game was originally written in full color for the Apple II, but the black-and-white Mac version compares well. The graphic images are so well designed and in such high resolution that you soon forget that they occupy only a 2½ × 4-inch space.

Robert Hardy, who wrote the Mac version of the game, has provided an Inventory pull-down menu at the top of the screen. It shows a list of items you've collected during your travels. He has also produced 80 finely etched pictures that make you forgive Apple for not giving the Mac a color screen (well, almost).

Although Transylvania is exciting, easy to play, and visually satisfying, you might complain that it does not take full advantage of the Mac's resources. Why, for example, must we scrawl our map of the forest on a sheet of actual paper? The thrill would be greater if we had a mouse-powered, map-making routine. How about using the mouse to manipulate objects on the screen? Or offering animation?

A game that makes even better use of the Mac's unique features is Millionaire, from Blue Chip Software. It has scads of pull-down menus, and virtually the entire game is mouse-controlled.

Your goal is to build a $10,000 grubstake into a cool million by buying and selling stocks and stock options.

If that sounds like an obscure or complex premise, don't worry. The game mirrors the obscurity and complexity of real-life stock trading. It is so well designed and so well suited to the Macintosh that you will quickly become enthralled.

Millionaire opens on week 14 of a 91-week playing session. Each "week," you have the opportunity to buy or sell stocks and options. The game tracks the activity of 15 stocks, and, with the click of the mouse button, you have access to a wide variety of investment information.

Real stock trading is a lot like this game. Millionaire has simplified it enough to be comprehensible, without sacrificing the experience of risk.

The stock-market graph shows overall stock-market activity to date; the specific industry graph tracks, say, the three retail-industry stocks in the game; and another graph reflects each specific company's performance. In addition, you can read the weekly *Financial Journal* for business news, pull down a description of any company in the game, or look up the high-low-close of any stock for the week.

Once you've done your "research," you buy your stocks and pay your brokerage commissions. (I told you it was realistic.) Your score is your net worth. The game also tracks your cash on hand and interest you owe on borrowed funds.

As your net worth increases, you earn certain privileges. For example, you can reach a status that lets you buy stocks "on margin"—that is, you put up only a part of the funds required to buy the stock. As in the real world, this strategy can produce great gains or stunning losses.

Higher levels of the game enable you to buy and sell stock options. You can even borrow up to 80% of your net worth and buy stocks with that money. By the time you've reached that extreme, you'll likely be holding the mouse with a sweaty hand.

You don't need to understand the stock market to enjoy the game (is there anyone who "understands" the stock market?). On the contrary, the game's proposition that stock prices relate to observable phenomena may lead a player to appreciate how the real stock market actually works.

Millionaire on the Mac can store up to 14 players' data. You can store a complete game's status, including the market environment, for later recall. A shrewd player can take notes as the game proceeds and may develop strategy based on past developments.

The game manual offers detailed instructions, a glossary of stock-market terms, and guidelines for working with the Mac. You can simply boot the disk and learn to play by playing.

Anyone who has learned a previous Mac application will find that this one runs in the same way as all the others—mouse controller, pull-down menus, windows, scroll bars, size boxes, close box: the works.

Does it matter that Millionaire lacks a color screen? Not a bit. Jim Zuber, who wrote the original version of the game for the IBM Personal Computer in color, says that color is unnecessary.

"We took the color out of the original IBM version," he explains. "That's because the current release has to run on 30 machines. We couldn't have it depend on color. In getting the game to the maximum customer base, color doesn't figure."

Playing Millionaire means calling up stock-market charts and company reports, reading the investment news, paying commissions, using leverage, and keeping your portfolio.

Fact is, real stock trading is a lot like this game. Millionaire has simplified it enough to be comprehensible, without sacrificing the experience of risk for players. No doubt, some sharp programmer someday will give us a real-life Mac investment program just like this one. +

PRODUCT INFORMATION

Transylvania
By Antonio Antiochia
Mac version by Robert Hardy
Penguin Software
830 Fourth Avenue
Geneva, IL 60134
(312) 232-1984
List Price: $39.95

Millionaire
By Jim Zuber
Mac version by Ms. Bert Porter
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Lisa 7/7—Apple's newest integrated-software package

Apple Computer has reworked the Lisa Office System software applications into a single software package called Lisa 7/7. It is the third major release of Apple's software for the Lisa, and it is more capable and more fully integrated than the Lisa Office System.

The old Office System software consisted of seven separate packages that ranged in price from $195 to $395 each. The seven programs were LisaWrite, a word-processing program; LisaCalc, an electronic-spreadsheet program; LisaList, a database program; LisaGraph, a presentation-graphics package; LisaDraw, a freestyle-graphics package; LisaProject, a project-management program; and Lisa Terminal, a telecommunications program. Although the programs shared a similar command structure and user interface, they were not fully integrated; it was not possible, for example, to place graphics in a word-processing document.

In contrast, the new Lisa 7/7 is a single software package selling for $695 that integrates all seven applications. The Lisa 7/7 software also adds several excellent new features such as a spelling dictionary and support for color printers. Here is a rundown of the seven applications and some highlights of their new features.

1. The LisaTerminal telecommunications program has corrected the word-wrap problem that plagued the old version. Previously, LisaTerminal could communicate only with LisaWrite and LisaCalc documents; the new Lisa 7/7 version works with information from LisaList and LisaProject as well.
2. The LisaCalc electronic spreadsheet now includes the ability to calculate internal rates of return and perform statistical functions and natural-order evaluations.
3. The old version of the LisaList database program was not integrated with any of the other applications. This drawback has been rectified; LisaList can now share information with LisaWrite, LisaCalc, LisaProject, LisaGraph, and LisaTerminal.
4. The LisaGraph presentation-graphics package for creating charts and graphs for business presentations now has a built-in linear-regression function and also can create 3-D bar charts and stacked bar charts.

Best of all, the software now supports color printers. The printer Apple recommends is the Canon PJ-1080A ink-jet printer, which produces excellent color graphics on plain paper or overhead-transparency material.

5. The new version of the LisaDraw freestyle drawing package also supports color printing on the Canon ink-jet printer, and the program has been enhanced with a reduce-to-fit option, an improved line-smoothing technique, and the ability to rotate text or objects.
6. The LisaWrite word-processing program now works with all the applications and lets you paste from LisaGraph, LisaDraw, or LisaProject into LisaWrite documents. The program can also do multicolor printing. Another great new feature is the addition of an 80,000-word spelling dictionary from Houghton-Mifflin. The dictionary is advanced, and you can operate it with the mouse. Another provision lets you add up to 750 user-definable terms, such as company names, product names, trade jargon, or other specialized terms.
7. The LisaProject project-management program now offers the ability to keep track of project costs and can fully integrate tables and graphics from the other Lisa 7/7 applications. LisaProject is one of the particularly impressive features of the Lisa 7/7 software package. It is a first-rate project-planning and management tool that is unequaled in the microcomputer world. None of the other "integrated" software packages, such as Lotus 1-2-3, Symphony, Context MBA, or Framework, offer this capability. Since LisaProject is so innovative and useful, we are presenting a full review of this program in the article "Project Planning with the Lisa," which appears on pages 80–83 of this issue.

Besides enhancements to the various applications, Lisa 7/7 also offers improvements to the general "Lisa Desktop" operating system. Password protection is now offered at both the document level and the folder level, and it now has a provision for print queuing.

The new Lisa 7/7 is definitely the best integrated-software package on the market today. The accompanying chart shows how it stacks up against its main competitors. This third revision of the Lisa software has not only improved the software's capabilities, but it has also positioned it better in the marketplace, which may help the Lisa regain some of the ground it has lost to the IBM PC and XT. +

Figure 1: How Lisa 7/7 compares with other integrated software

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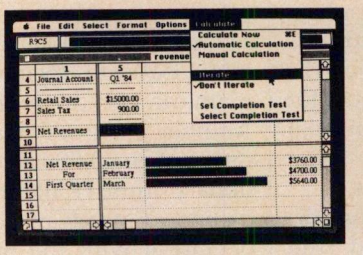

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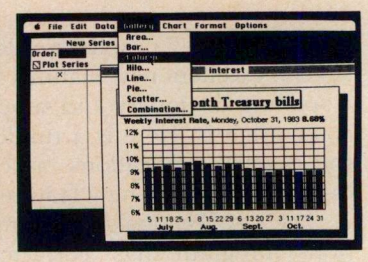

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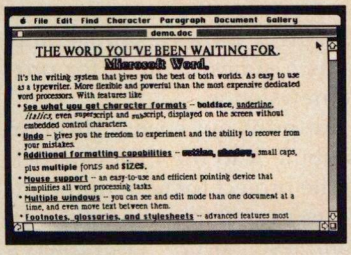

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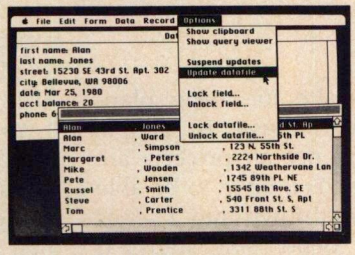

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Project planning made simple

LisaProject

THE LISA/*BY SHARYN VENIT AND D. BURNS*

How long will it take to build a solar home in the mountains of Virginia? What are the steps in producing a Broadway play? How late can a particular activity start without affecting the final completion date of a project?

Questions like these occupy people who are responsible for making things happen on schedule. Sometimes the main concern of managers is not "when will it happen?" but rather "How many items on our list can we accomplish in time?" or "Is this project feasible at all, given the time frame and current resources?" LisaProject can help answer questions such as these. LisaProject is a project-planning tool that lets you create charts that are similar to PERT (program evaluation and review technique) or CPM (critical-path method) charts (see box on facing page).

Until now, graphic planning tools like this have been available only on mainframes and minicomputers. Some microcomputer packages offer help with scheduling, but they cannot draw the kinds of charts available through LisaProject. The graphics LisaProject creates offer visual clarity that is not possible with comparably priced systems.

LisaProject can help set calendar dates for each step in a project and evaluate the related costs, as well as produce clear graphic presentations of plans for review by project team leaders.

The Program

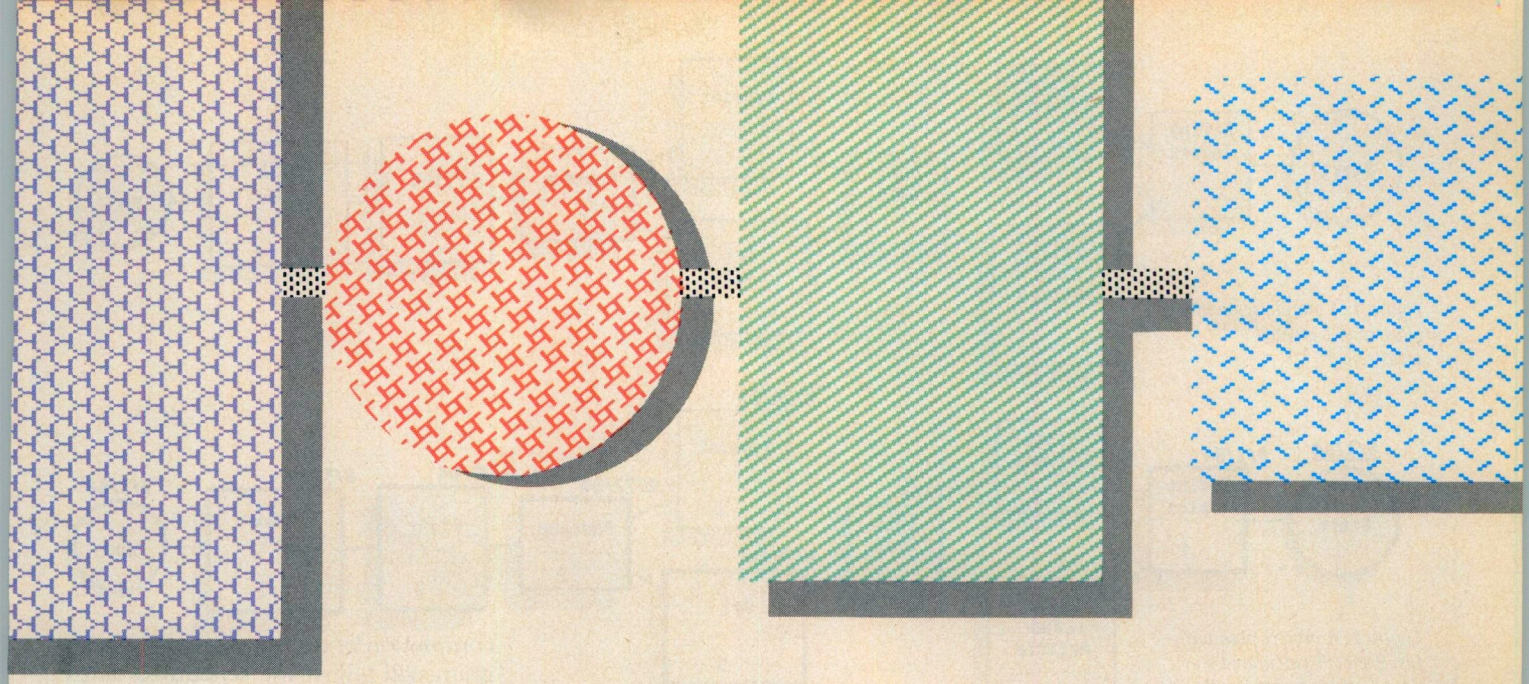
The prerequisite for using planning tools like these is simple enough, though not all projects are suited for them. You have to be able to break a project down into a series of sequential, dependent steps. If you're going to produce a Broadway play, for instance, you'll need to choose the play, select a cast, choose understudies, schedule rehearsals, build the set, and so on. Before any new activity can begin, you must complete all preceding steps on which it depends. Furthermore, each person involved in the project can do only one thing at a time.

The heart of the LisaProject program is a diagram that shows the activities required to accomplish a goal. Based on the information you enter into the schedule, LisaProject can create GANTT-type (horizontal-bar) charts of activities, showing the project on a time scale by task or by resource (e.g., person or group).

Using LisaProject, you begin by identifying the tasks in the project and placing them in relation to each other. The program represents each activity with a rectangle drawn on the screen, and it draws lines to connect activities that are dependent on each other, indicating the sequence of events. Figure 1 shows a simple project plan as a series of steps for producing a newsletter.

You can print out such a diagram and distribute it to the major participants in the project for review and input for the next step, scheduling. In their simplest form, LisaProject's schedules show the name of each activity and its duration (in days). After you specify the project-start date, the number of days required per task, and the number of work days per week, the program calculates the projected completion date of the project. You can use LisaProject's Customize menu to enter dates of holidays that occur during the project cycle. You can also schedule a project by weeks (rather than days) by defining each week as having only one "work day."

In scheduling tasks, LisaProject follows a rule of most planning methods: An activity cannot begin until all preceding activities on which it depends have been completed. Following this rule, LisaProject calculates each task's earliest start date, latest start date, earliest completion date, and latest completion date. Figure 2 shows the newsletter production plan with the start date, final deadline,



and days per task that the planner entered. LisaProject calculated the starting date for each task in the project (shown above the top left corner of each activity rectangle). You can enter these dates manually if you wish, thus overriding LisaProject's automatic scheduling.

Critical Tasks

If the earliest completion date is the same as the latest completion date for an activity—if there is no "slack"—then the activity is critical to the timely completion of the whole project. Such activities fall on the "critical path" of the project, which LisaProject automatically displays in boldface type. If any activities along the critical path are delayed, then the entire project will be set back by the same amount of time.

Noncritical tasks are those that have some slack in the schedule, tasks for which the earliest completion date is different from the latest completion date. The slack time for these tasks appears as gray shading on a task chart, which LisaProject creates, based on the information on the schedule chart. The task chart in figure 3 shows each activity stretched out across the time scale for the whole project. Any changes you make to the schedule chart will automatically show up in the task chart—you cannot make changes to the task chart directly. In the latest release of the program, you can assign fixed costs to various tasks on a separate Project Table.

The Resource Chart

In addition to specifying the duration of each task, you can specify the name of the person responsible for that task. A task may involve more than one person, and you can specify a different amount of time for each person required for an activity. Based on this information, LisaProject creates a resource (GANTT) chart showing each person's activities over time, such as the chart in figure 4, which is based on the personnel plan in figure 5. Here LisaProject follows the rule that each person can be involved in only one activity at a time. If you want people to do more than one thing at a time, you can deliberately set up the schedule accordingly by giving them a different "name" or function identification in each overlapping activity.

As on the task chart, slack time appears as gray shading on the resource chart.

Project control begins with a review of the difference between the schedule and actual performance over the life of a project. You can identify review points on the schedule as circular "milestones." At these review points, you can update the schedule to reflect revised task-duration estimates, personnel assignments, and start/finish dates. You can also enter the time remaining for

PERT AND CPM CHARTS

PERT charts were originally developed in the 1950s to help accelerate the development of the Polaris missile. These charts consist of a series of events with estimated completion times or start/finish dates. With a PERT chart, planners can ask "what if" questions such as, "If a certain event is completed by a certain date, how soon will the next event be completed?" and "How soon will the entire project be completed?"

The Critical Path Method was developed independently at about the same time as PERT. CPM is useful in determining the trade-offs between the costs and completion dates of a given project. In the newest version, LisaProject can automatically calculate costs, and it identifies the critical path of the project.

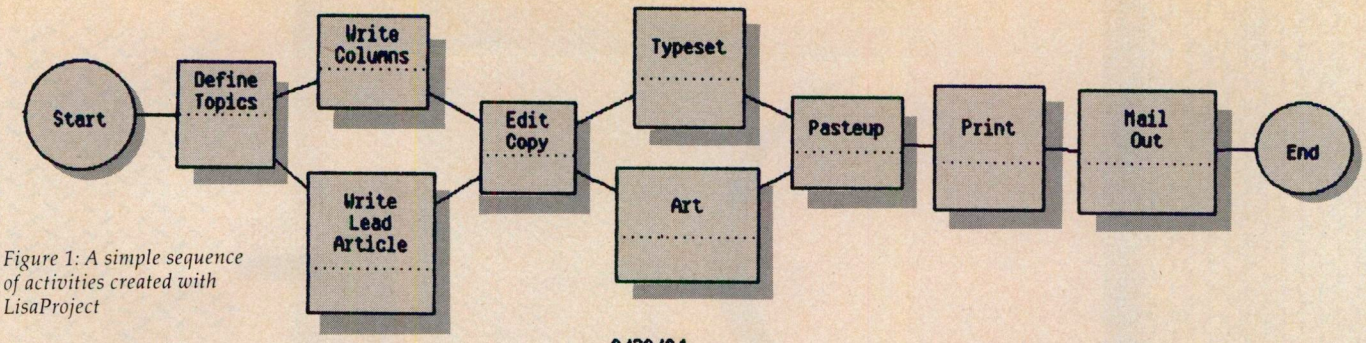


Figure 1: A simple sequence of activities created with LisaProject

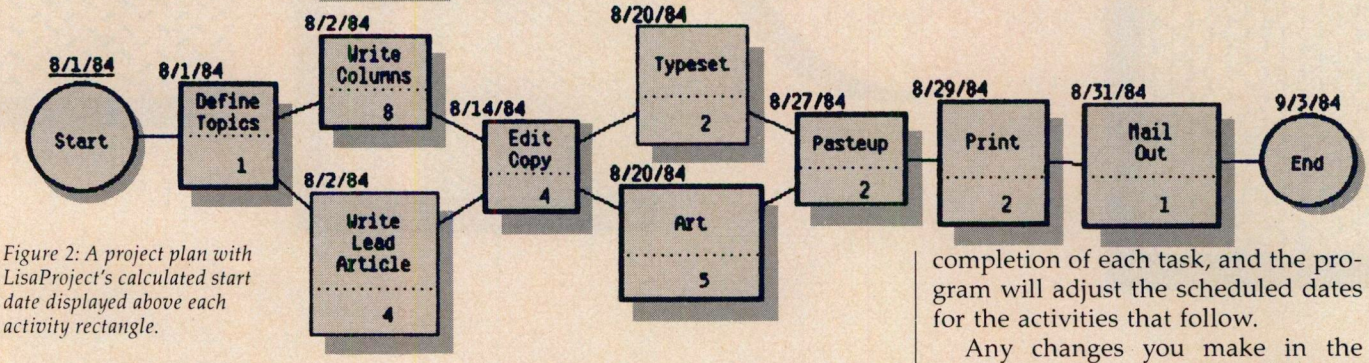


Figure 2: A project plan with LisaProject's calculated start date displayed above each activity rectangle.

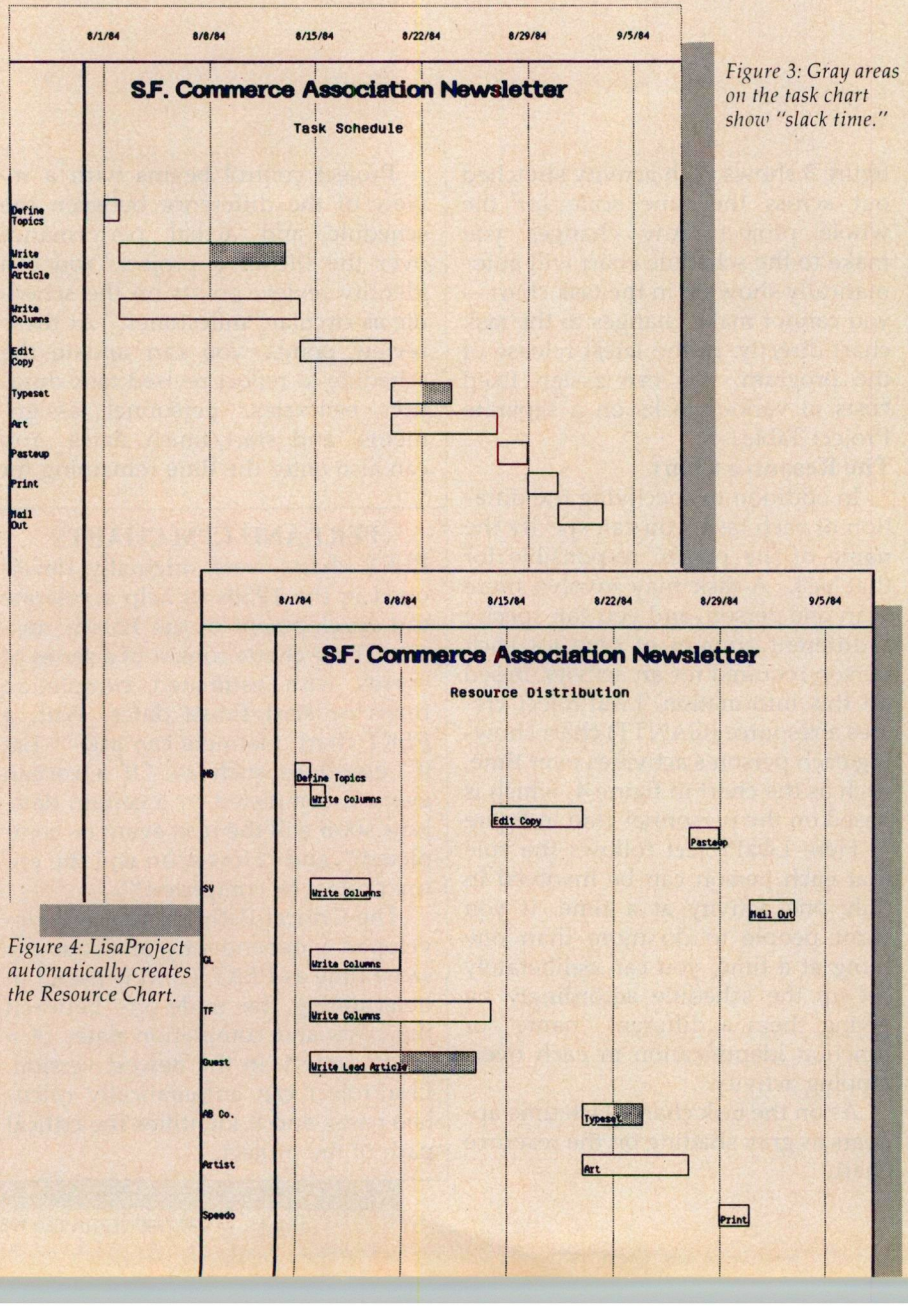


Figure 3: Gray areas on the task chart show "slack time."

Figure 4: LisaProject automatically creates the Resource Chart.

completion of each task, and the program will adjust the scheduled dates for the activities that follow.

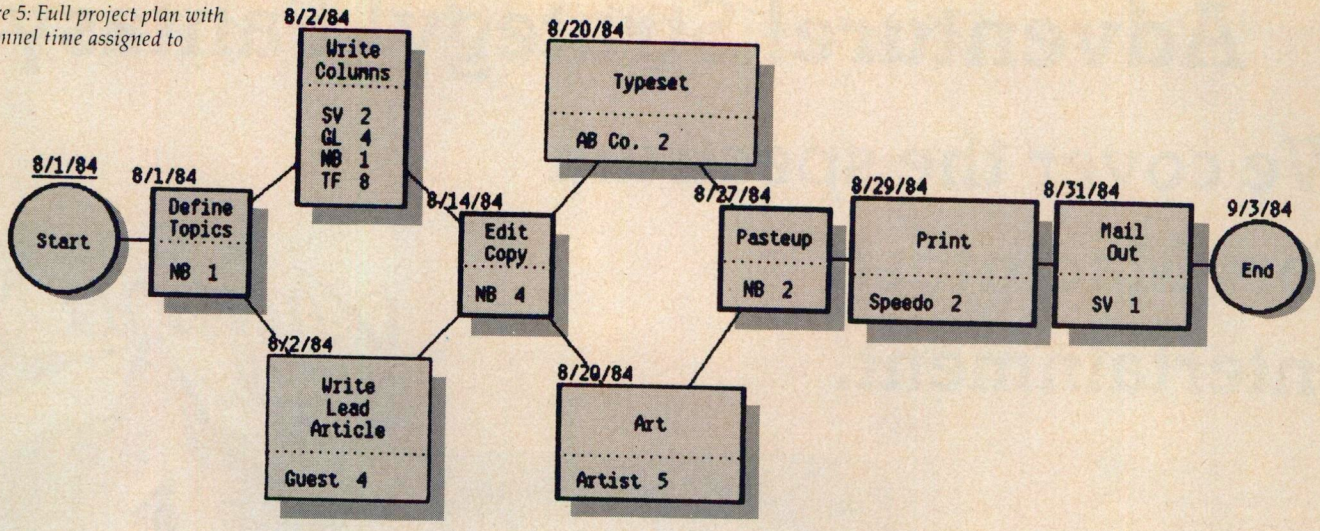
Any changes you make in the schedule chart will automatically be reflected in the task and resource charts. You can print each of these charts out, horizontally or vertically, on 8½-inch-wide paper. LisaProject lets you preview pages before printing, so you can manipulate the schedule chart to accommodate page breaks. For emphasis or aesthetics, you can make individual task rectangles and circles larger or smaller. The program also lets you reduce the size of task and resource charts that span a long time period by changing the scale of the time axis from one week to two, four, or eight weeks.

You can also copy charts you create with LisaProject into LisaDraw, where you can add borders, shading, and more text for your final presentation. LisaProject provides only two areas—for headings and subheadings—for text entries outside of task descriptions.

For large projects, you can start with an overall plan and then break it into segments, which you copy into subfiles and expand. You can show alternative plans by copying and changing the first basic plan. With LisaProject at your service, you may find your needs for clearly documented plans expanding to include simple office routines, such as end-of-month closing procedures, that go into an in-house training and reference manual.

With the ability to assign costs to

Figure 5: Full project plan with personnel time assigned to tasks



different phases of the project plan, LisaProject has become a truly complete planning tool. Once you've entered dollar figures in the Project Table, LisaProject automatically calculates both incremental and cumulative costs of the project.

LisaProject is not offered as a stand-alone program. Instead, it is now part of the Lisa 7/7 integrated-software package (see "All Together Now," on page 77 of this issue). The documentation is also part of the Lisa 7/7 package. The manual is attractive, with many graphic examples, and easy to use. It contains setup information, a tutorial, a reference guide, and an index. If you use the tutorial, which has you access associated disk files, or study the excellent examples of project plans on the LisaProject diskette, you'll find the programs easy to learn.

LisaProject goes a long way toward simplifying the previously complex task of planning a project. ✚

PRODUCT INFORMATION

LisaProject (available only as part of the new Lisa 7/7 integrated-software package)
Apple Computer, Inc.
20525 Mariani Avenue
Cupertino, CA 95014
(408) 996-1010

List Price: Lisa 7/7, $695

Requires: Any Lisa computer, 1 megabyte of RAM, hard disk with at least 5 megabytes

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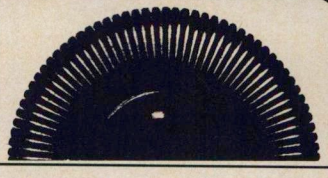

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Software Development with the Macintosh

Some of you have been writing me to ask questions about the Macintosh. The two most frequent questions are: What is the memory-upgrade process going to be like? and How do you go about developing software for the Macintosh?

I can't answer the first question, since Apple doesn't yet know (or won't tell) the details of the upgrade process from 128K to 512K of memory. I suspect it will be costly (around $1000) and may include more than just a memory upgrade, since the entire electronics board will be replaced during the process.

So much for guesses.

I *can* tell you about the software-development process for the Macintosh, and since in my last column I was just beginning to describe how the Mac works at the assembly-language level, I thought software development would be an appropriate subject for this month's column.

The Mac and the Lisa

To date, the Mac and the Lisa have been an inseparable pair. Almost all authors of Apple's software for the Macintosh prepared their programs by writing them in a special version of the Lisa Pascal language, compiling them to assembly language, and then sending the program to the Mac via the Mac's and Lisa's serial ports. In addition, since Lisa Pascal lets you write assembly-language code within a Pascal program (a process called "in-line assembly-language code"), you don't necessarily have to program in Pascal (other than providing a few obligatory statements).

You can't get there from here (yet).

The "special" part of Lisa Pascal is a series of prewritten procedures, each of which corresponds to one of the ROM routines I began describing in my last column. Thus, to fill a rectangle with a pattern, you use a Pascal procedure called FillRect. Other ROM routines are similarly named (Microsoft BASIC uses the same names for the few ROM routines it implements).

Apple's preference for Pascal began with its adoption of UCSD Pascal for the Apple II, way back at the turn of the decade (well, it *seems* like a long time ago!). Both of the BASIC interpreters for the Apple II were minimal versions, meaning that they did not sport features that made sophisticated or business programming easy. UCSD Pascal solved all these problems.

Beginning with the Apple III, Apple began using Pascal as the language of choice for development work within Apple itself. By the time the Lisa rolled out in 1983, Apple had its own version of Pascal, which compiles programs into true 68000 assembly-language code. Since Lisa Pascal is a compiler (UCSD Pascal was a quasi-interpreter, meaning it interpreted special instructions while executing), it was ideally suited for the earliest Mac software development, since the Macintosh requires small, fast programs to achieve its desktop illusion.

The Mac Development Process

Writing a program on a Lisa and testing it on a Macintosh is a cumbersome process: (1) write your program, using the Lisa editor, (2) compile it, using Lisa Pascal, (3) send it to the Macintosh through the serial ports, (4) install the resource- and application-file pointers on the Macintosh, (5) boot a special Macintosh diskette that includes a debugger and disassembler, (6) start your program, (7) examine what is happening by using a terminal (a Lisa will do) connected to the Macintosh and make corrections as necessary, and (8) go back to step 1 if you discover a problem.

"Wait a second," you say. "What's this 'install the resource- and application-file pointers on the Macintosh?' "

That's a good question. It turns out that Apple makes a distinction between program code and resource code. A program is a sequence of instructions to the computer; a resource is something the computer might use to carry out an instruction. In the Macintosh, messages, fonts, windows, advisories, and graphic illustrations are all regarded as resources. Thus, a program instruction might tell the computer to send message 1 to the active window. In a special resource file, message 1 might read, I'M SORRY, BUT I CAN'T DO THAT, FRANK.

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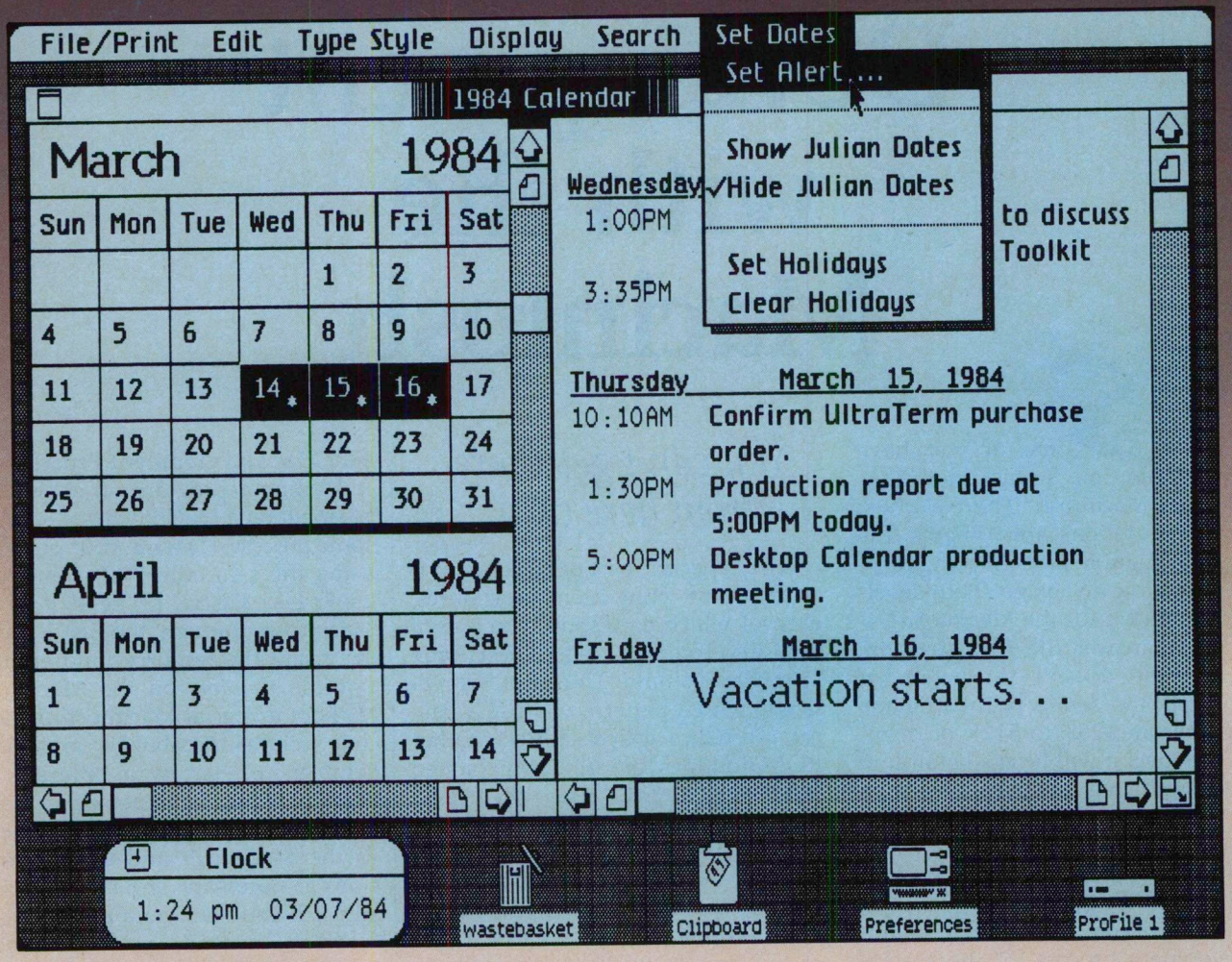
INTRODUCING



Desktop Calendar for your Lisa 2

Desktop Calendar, a new tool for the Lisa 2, will improve the way you work because it helps you manage your time.

Your're an important person. Working hard to get the job done. But what happens if you get so involved in your work that you lose track of time? Missing an important appointment or meeting can mean disaster.

If you put the times and dates of all your important appointments and meetings into Desktop Calendar, it will automatically remind you of them in time for you to meet your commitments. Once you place Desktop Calendar on your electronic desktop, you can use your computer to write a letter, recalculate a schedule, prepare a financial statement, or use any of the Lisa Office System Tools. At the proper time Desktop Calendar will interrupt, reminding you of your appointment.

Talking on the phone to an important client? Want to know all the dealings you've had with them for the last three months? Desktop Calendar will search through its electronic notebook and tell you. Want to know the address of an important business contact named 'JONES'? Desktop Calendar will tell you that too.

Desktop Calendar is more than just a calendar for your computer. It will also keep track of appointments, hold addresses for easy reference and remind you of important events, even when you are busy working with another tool in the Lisa Office System.

Desktop Calendar will be available third quarter 1984 from Videx.

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One other nifty thing about resources: the Mac operating system figures out where they are (they could already be in memory or still on a disk) and retrieves them. Thus, you sometimes have to insert the System disk, the one you started the computer with, when an advisory message such as "Save changes before leaving MacPaint?" appears.

Unfortunately, splitting resource and program code requires that you tell the computer at some point which resources go with which programs, thus we get step 4 in our development process. You can create most resources on the Lisa or the Macintosh with the development tools Apple provides to certified developers.

More than a year before the Macintosh's introduction, Apple began courting software developers, trying to convince them to put their programs out in Macintosh format, using the unique Macintosh operating system. To such developers, Apple provided a low-cost Lisa, a prototype Macintosh, Lisa Pascal, a set of Macintosh utility programs, and a mimeographed copy of the then current version of *Inside Macintosh*, Apple's guide to programming the Mac.

Developers were hindered by several factors: the multistep, multimachine development process described above; the necessity to use Pascal or 68000 assembly language for programming; and the "newness" of Apple's operating system and the still emerging documentation on it.

By now you understand why Macintosh software didn't just pop out when the computer did. Even though Apple did all the "right things," software companies need a certain period of time to learn new ways of doing things. With the possible exception of a handful of firms (Microsoft, Software Publishing Corporation, and Haba Systems are three I can think of), most developers didn't really begin to understand the Mac's unique environment until early 1984.

Sophisticated software development for the Macintosh will no longer be the exclusive province of Lisa owners and certified developers.

Fortunately, the situation has changed. Apple's book *Inside Macintosh* is now almost complete, and seminars for developers are in full swing. By the time you read this column, three more programming languages will be available for the Macintosh: Macintosh Assembler, MacBASIC, and MacPascal. In a few months, two more development tools will be available: a Macintosh version of Lisa Pascal and a Macintosh version of the C language.

What does all this mean?

Well, MacBASIC or MacPascal should solve most people's programming problems. Both are definite improvements over their predecessors and exceptionally easy to learn. The only problem I see with these languages is the limitation on program size that both of them impose and a bit of speed deficiency due to the interactive nature of the products. Both use prewritten procedures for most of the ROM routines, making advanced graphics simple to produce.

Personally, I look forward most to the assembler. Assembly language is the best way to make the most of the computing power locked inside Mac. Since the machine has only 128K and a 68000 processor, small, fast-executing programs show the Mac off to its fullest. Also, Apple's version of the assembler promises to be one of the most useful ever produced. Besides easy access to all those juicy ROM routines, the assembler will include a debugger so that you can control a program running on one Macintosh, by using another. This addition allows programmers to optimize their program's performance by observing what actually happens within the programs. In other words, sophisticated software development for the Macintosh will no longer be the exclusive province of Lisa owners and certified developers (although you will need two Macintoshes).

When the Macintosh Pascal compiler (not MacPascal) and Macintosh C finally appear, programmers will have a full set of development tools.

Required Reading

If you're going to seriously tackle writing Macintosh programs, you'll need some other tools. One is *Inside Macintosh*, which currently consists of two photocopied binders full of information about the Mac ROM and operating software. It costs $150. (Apple promises a bound version available through dealers late this year.) Another essential tool is the Macintosh Software Supplement, which consists of utility and sample programs for software development. It costs $100. You can purchase both by mailing payment to Apple Computer, Inc., 467 Sarasota Avenue #621, Cupertino, CA 95014 (Californians, don't forget the sales tax).

If you want to go even further and have access to Apple telephone support, programming seminars, and product-development information, you should apply for the Apple Certified Developer Program. You'd better be serious, however, since Apple will require you to submit a detailed business plan and product information and be able to show your commitment to the Lisa and Macintosh. In return, you can get discounts on development equipment, access to Apple's distribution channels, and other additional support. Write to Software Industry Relations, Apple Computer, Inc., 20525 Mariani Ave, Mail Stop 23AF, Cupertino, CA 95014.

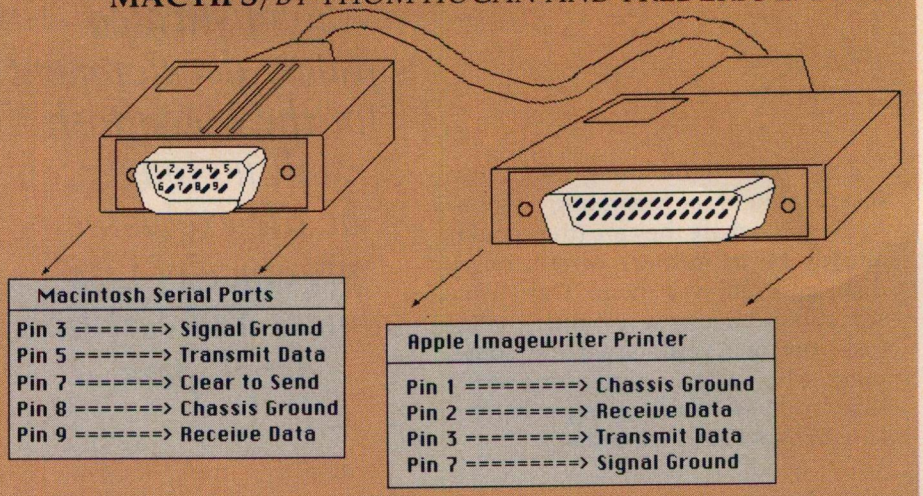
By the next column, I expect that many of you will have your copies of *Inside Macintosh* and at least one of the three available programming languages, since I'll be getting down to nitty-gritty details of creating Mac programs. You'll get the most out of them if you try out some of what I present. +

SERIAL-PORT PINOUTS

The rear panel of the Mac has special-purpose serial ports marked with a printer icon and a telephone icon. Each of the ports can support three standard serial-communications protocols, the RS-232, RS-422, and AppleBus protocols. The RS-232 protocol is the most common today (most modems and many printers use it), and we thought you might like to know how to wire an RS-232 serial cable for use with the Mac.

The Macintosh end of the cable should have a 9-pin, male, DB-9 connector attached to it. The RS-232 end of the cable should have a 25-pin, DB-25 connector (whether you use a male or female DB-25 depends on the peripheral device you are connecting the cable to), unless you are connecting it to a device such as the AppleModem that also uses a DB-9 connector.

The table shows the proper pin connections. Note that Apple has chosen a nontraditional pin-numbering scheme for its serial port because the port supports more than one serial protocol.



SIGNAL NAME	MACINTOSH	APPLE PRINTER	APPLE MODEM	REGULAR MODEM
Chassis ground	3	7	3	7
Transmit data	5	3	5	2
Clear-to-send	7	NC*	7**	8**
Chassis ground	8	1	1	1
Receive data	9	2	9	3

* No connection ** Not really CTS, but data terminal ready connection

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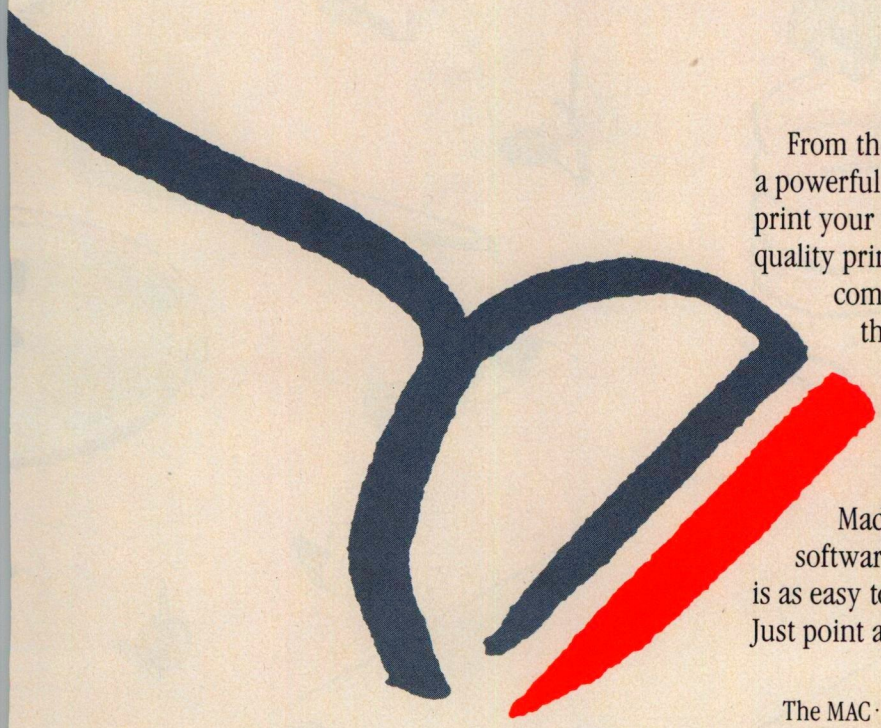

From the team who wrote MacWrite™ comes a powerful application program that allows you to print your text with any popular daisywheel, letter quality printer. The new Mac Daisywheel Connection comes with the interface cable you'll need, the software program and a quick start-up guide. The application program is straightforward and maintains the visual fidelity of your file even when you mix text and graphics. The Mac Daisywheel Connection supports MacWrite and Multiplan™ and other Macintosh software products. The Mac Daisywheel Connection is as easy to use as your Macintosh mouse. Just point and print!

The MAC · DAISYWHEEL · CONNECTION is now available through your local Apple Computer Dealer. List price $99.

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Other quality products available from Assimilation Process:
- Ten-Pack of blank 3½″ diskettes for your Macintosh $55.
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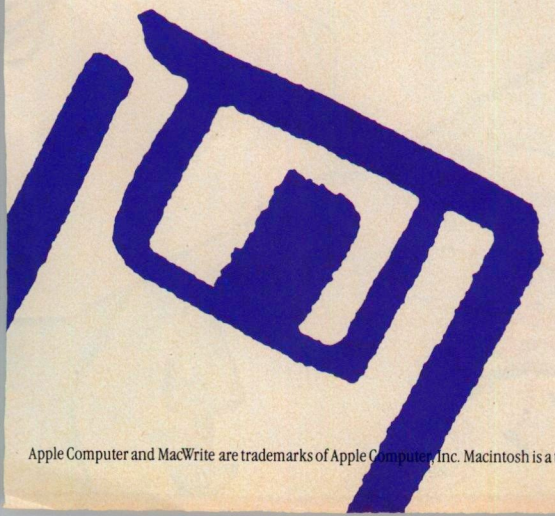

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SOFTWARE REVIEW/*BY W. CHARLES DOHERTY*

A database management system that grows as your company does

Omnis 2

If you have been waiting to use your Macintosh for something a bit more serious than MacPaint, you may be interested in a new series of software from Organizational Software Corporation. The Omnis family of data-management software lets you maintain a sophisticated base of information and produce custom-designed reports, all for a low cost.

The Omnis family has three members: Omnis 1, a record-storage system; Omnis 2 (The Information Manager), a more sophisticated package; and Omnis 3, which OSC refers to as The Database Manager.

If you upgrade from one member of the Omnis series to another, you can transfer the files you have used in the past to the newer system. Thus, you can start with the system that meets your present needs without worrying that you may outgrow it in the future.

Omnis 2 can handle most of the data-management tasks a small business or professional practice requires, and it was the package I tested for this review.

Each record in an Omnis data file can have up to 12 different "pages," with as many as 120 separate pieces

JOHN HERSEY

MOUSE MEETS

The first mouse wanted a modem that would be very Macintosh-like. Icons and all.

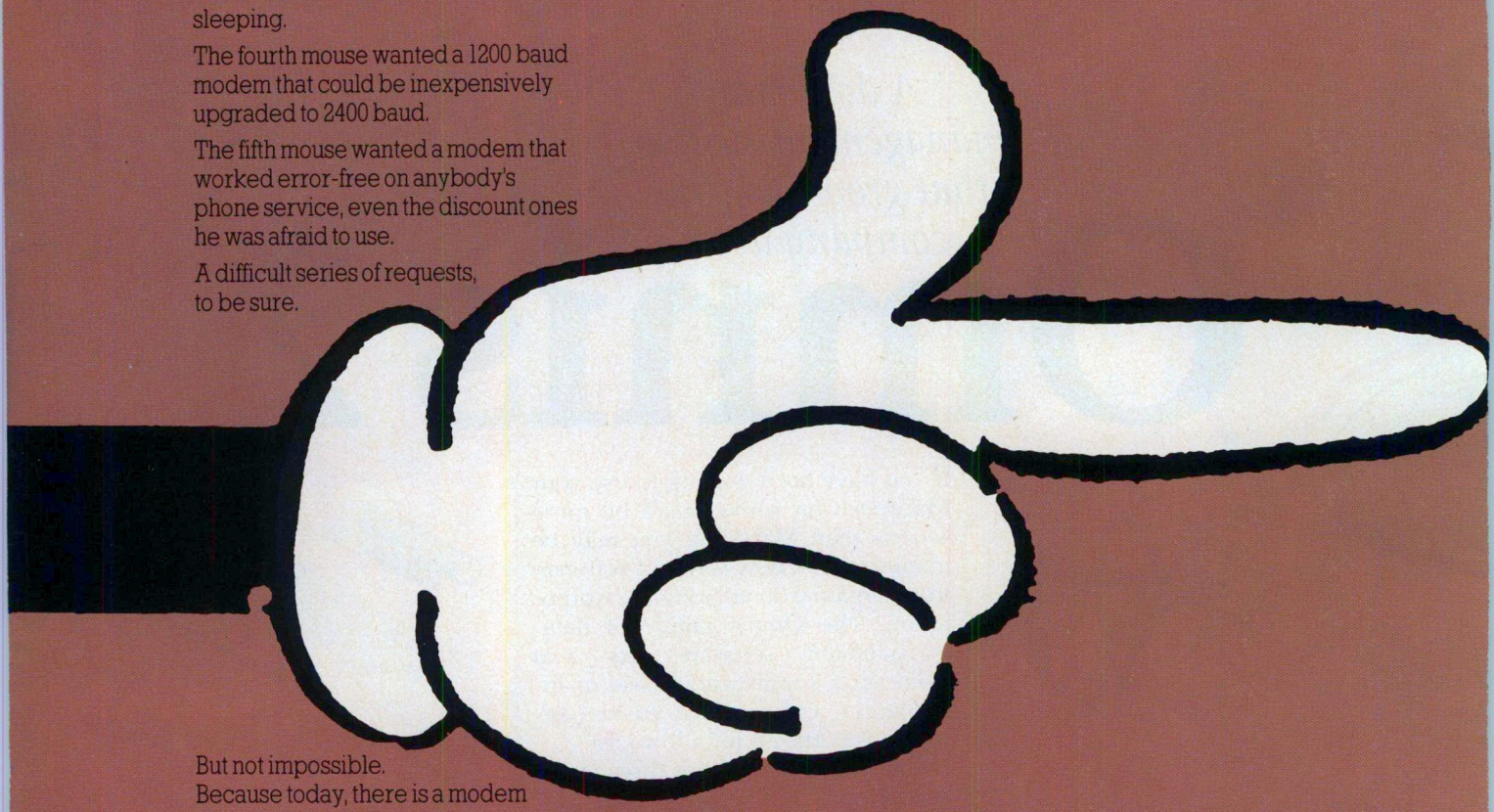
The second mouse wanted a modem that could talk to its brothers at IBM.

The third mouse wanted a modem that could take over while its owner was sleeping.

The fourth mouse wanted a 1200 baud modem that could be inexpensively upgraded to 2400 baud.

The fifth mouse wanted a modem that worked error-free on anybody's phone service, even the discount ones he was afraid to use.

A difficult series of requests, to be sure.



But not impossible.
Because today, there is a modem that will make your mouse very, very happy. It's called MACMODEM. It's made just for the Macintosh. And it's the only modem that can satisfy mouse 1, mouse 2, mouse 3, mouse 4 and mouse 5.

Two clicks and your mouse will be in and out of your favorite database with exactly the information you want. A job that takes an awful lot of clicking and keystrokes with any other modem.

To see it in person, visit your local Apple dealer and ask for MACMODEM. If he hands you something else, don't go for the bait. Call 1-800-322-3722. Microcom, Inc., Norwood, MA 02062.

MACMODEM™

MICROCOM

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MODEM

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of information. The storage space of your computer limits the maximum file size. A single-drive Macintosh can use Omnis efficiently, but a second drive greatly enhances its performance.

The ideal system would incorporate a hard disk for data storage. (Omnis has been fully tested on Mac-compatible hard disks from both Tecmar and Davong.)

Omnis is available for many different computers in addition to the Macintosh, and all the versions of the program share the same command structure.

Since most commands start with the Escape key, which is absent on the Mac, OSC chose to reassign the tilde/grave-accent (~, `) key at the upper left of the keyboard to behave as if it were an Escape key for the purposes of this program.

The initial version of Omnis uses none of the pull-down menus and icons that are integral to most other Macintosh software. It does, however, use standard menus and prompts. OSC plans to release a new version of Omnis for the Mac this October that will make full use of the mouse, Macintosh's pull-down menus, icons, dialog boxes, and other special features. Current Omnis owners will be able to upgrade to the new version for a $25 materials-and-handling charge.

Record Design

Setting up a record is easier than with most other data-management programs. On a blank screen, position the cursor where you want an entry and give it an appropriate heading, such as Stock Number or Customer Name.

Once the headings are in place, you assign a name for the entry itself, determine its type and maximum length, and specify whether the field should be indexed for use in a search.

Indexed fields help you locate specific records efficiently, but you must pay a price. Since they require more storage space than standard entries, the maximum number of records that can fit within a file is reduced each time you add an index field.

You can give any entry a default value that will appear automatically in each record. You can replace the default during data entry if you need some other value. In addition, you can assign a check function, which verifies that an entry meets certain conditions before the program accepts it.

If you are designing a file to handle customers' orders, you can have Omnis verify that each entry is above a minimum order figure and below the customer's credit limit. The program will reject any values outside of these limits.

Some of the most powerful Omnis 2 functions involve its Date commands. When you specify a field as a date, the program converts any entry in the field into a month/day/year format, such as JUN 02 83. More important, you can add or subtract from date fields or calculate the time between two dates, which is helpful in the report process.

Entering and Locating Data

To enter new records, simply select the Insert function, move from field to field, and type in the information. When you have filled in as much of the record as you wish, press Escape, and the program adds your information to the file.

To find a record—to read, edit, or delete it—you *can* step through the file record by record until you locate the correct one. A more efficient method is to have Omnis look for a match between data you supply and information in the file. For example, if you want to examine the personnel record for Mr. Davis, enter Davis in the name field, and Omnis will find the appropriate record. If the file contains more than one Davis, you can make the search more specific by entering a first name as well.

Multiple Update and "Zap"

Omnis can change or delete many records at once. Say, for example, you are using Omnis to maintain price information for a retail store and you receive notice that Acme, Inc., has raised all of its prices by 15%. With Omnis' Multiple Update function, changing the cost in all records of Acme products to reflect this increase requires only one operation.

The multiple "Zap" feature allows you to eliminate unwanted records just as easily. You can "cleanse" mailing lists, for example, by removing entries whose last-order date is too far in the past..

Report Design

Omnis provides a reporting system that is flexible and powerful, though a bit hard to learn and use.

You design reports on the screen exactly as they will appear on paper. You can position headings along the top of the report, above the columns of information.

Data in a report is not limited to what the records themselves contain—you can calculate any part of a report from other information. For example, a report of salaries based on personnel records can include a bonus figure that reflects length of employment and productivity, even though the bonus is not contained anywhere in the record itself.

A report can include every record in a file or only those that meet certain conditions. You can also specify a particular order for results. Our example report can include only members of a particular department who have been with the firm for more than a year, and the program can sort the data by the employees' last names. The final report can also include totals, subtotals, and even averages.

You can store each report format on disk, and it appears in the report menu for later use. Generating a report once the format is on disk is easy, but the design process is best left to an experienced computer user.

All in all, the report functions of Omnis are among the most flexible you will find in any program—and are almost unheard of in the program's price range. The trade-off is the complexity of the command structure for report design, which makes the program a bit difficult to learn and use.

Data Security

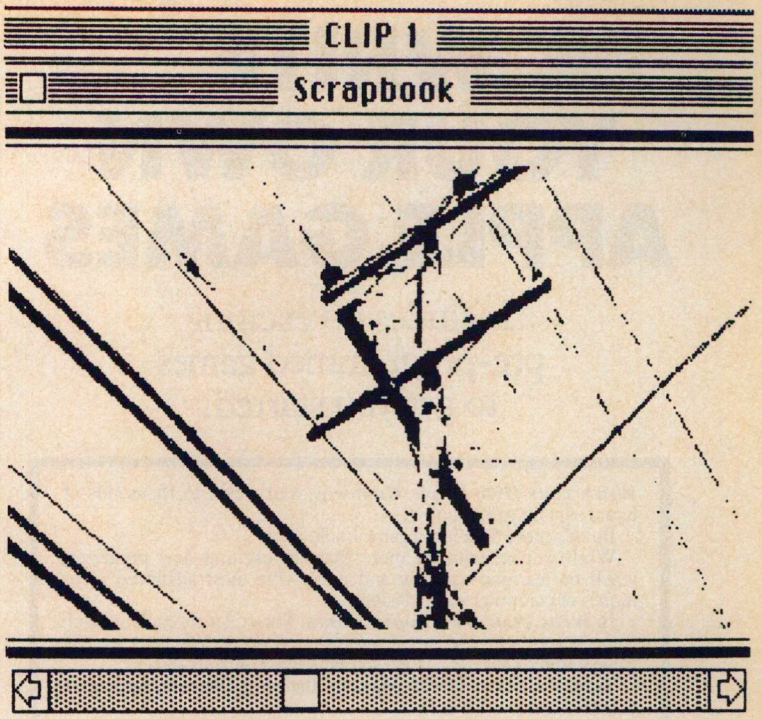
Some applications require many users to have access to a database. To maintain some control over their actions, Omnis allows assignment of passwords, each providing a different level of system access.

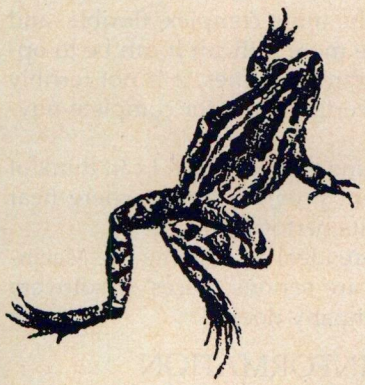
Below the master user, who has control over all parts of the system, you can specify four additional user passwords, with appropriate operations assigned to each. You can prevent users from viewing particular information within a record and can restrict their ability to change data.

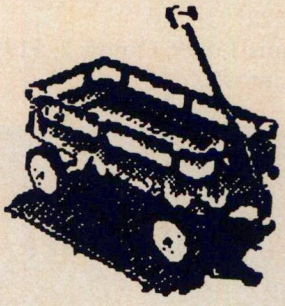
AT YOUR FINGERTIPS

CLIP ART FOR THE MAC

for your scrapbook







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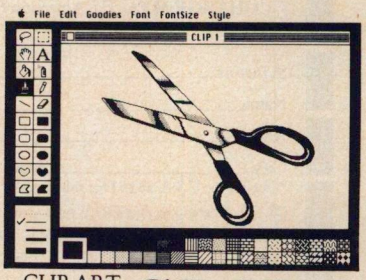

CLIP ART FOR THE MAC **CLIP 1**

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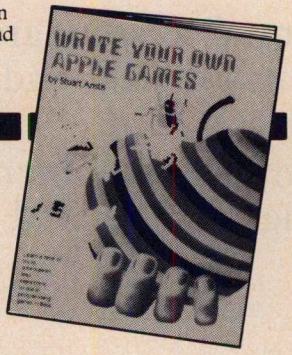

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Also available in your local bookstore or computer store.

Documentation

Omnis comes with a thorough, informative manual that describes program operation and provides a step-by-step tutorial. A complete reference section and several appendices are included in this loose-leaf package.

When you finish both the basic and advanced sections of the tutorial, you'll have a good working knowledge of Omnis. Perhaps you won't know the entire program by heart, but you will feel comfortable designing basic records and reports.

Because Omnis comes to us from across the Atlantic—Suffolk, England, to be precise—its documentation has an unmistakably British accent. In the tutorial section, you design a personnel record in which the salaries are in pounds and the addresses are quite different from the city, state, and ZIP-code format we have come to expect.

Support

The Omnis system does not include a warranty, but registered users can receive a backup copy of the program disk and are eligible for telephone support.

Overall Impressions

Any program has trade-offs, but in Omnis 2 the pros clearly outweigh the cons. The only drawback of the system is the time it takes before you feel totally comfortable using it. But then again, the more complex, flexible, and powerful a program is, the more difficult it can be to operate. In view of the program's abilities, it is not terribly difficult to use—but it is certainly not for complete novices.

Omnis 2 is an outstanding value. In fact, I can think of no other data-management program at anywhere near this price that can match its performance.

The Omnis programs are ideal for making the Macintosh earn its keep. They are serious pieces of software that will grow as your company does. +

PRODUCT INFORMATION

Omnis
Organizational Software Corporation Inc.
2655 Campus Drive, Suite 150
San Mateo, CA 94403
(415) 571-0222
List Price: Omnis 1, $99; Omnis 2, $199; Omnis 3, $299
Requires: Macintosh

ATTENTION

Macintosh Aficionados

A+ would appreciate receiving any tips, hints, shortcuts, or suggestions that you have for using the Macintosh computer. We would like to publish these pearls in our MacTips feature in our Macintosh section. You'll receive credit in the magazine, and we'll pay $50 for each MacTip that we use. Send your tips to:

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"How am so I can

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CIRCLE 108 ON READER SERVICE CARD

Macintosh and Lisa

Pipeline

DB Master for the Macintosh
The Macintosh version of DB Master integrates menu-driven operation with the Macintosh mouse and can display different font styles and sizes on the screen. Included among its features are on-screen prompts, computed fields, ascending and descending sorts, a built-in report generator, report calculations, and a browse capability to view numerous records on the screen at the same time.
Stoneware, Inc.
50 Belvedere Street
San Rafael, CA 94901
(415) 454-6500
CIRCLE 550 ON READER SERVICE CARD

Softworks C
The first C compiler for the Apple Macintosh and Lisa computers, Softworks C generates optimized assembly-language code. Using Softworks C, you can intermix C and assembly-language programs and access the Macintosh's system routines. Applications written in Lisa C can be executed on the Lisa or can be moved to the Macintosh.

The C language is immediately available for the Lisa. Macintosh C requires Apple's assembler/debugger/editor package. *(List Price: $695, Lisa C; $395, Macintosh C; $30 Documentation Package)*
Softworks
607 West Wellington
Chicago, IL 60657
(312) 975-4030
CIRCLE 551 ON READER SERVICE CARD

ThinkTank
The first idea-processor program, ThinkTank, is now available in a Macintosh version. The program combines an editor designed for working with outlines and a simple text editor. According to the manual, you can also use ThinkTank as a card file, text database, or appointment calendar. *(List Price: $145)*
Living Videotext, Inc.
1000 Elwell Court, Suite 232
Palo Alto, CA 94303
(415) 964-6300
CIRCLE 552 ON READER SERVICE CARD

Tecmar's Candy Apple Line
Tecmar has introduced a Candy Apple line of peripherals for the Macintosh and other Applebus-compatible computers.

The Apple Jack provides Macintosh users with a 5-megabyte removable cartridge Winchester subsystem. The Candy Apple IEEE488 interface, which uses the Intel 8291A and 8292 integrated-circuit set, provides the Macintosh with talker, listener, and controller capabilities.

Also available is a 300/1200-bps modem interface called Apple Fritter that has touch-tone decoding and full voice interface. *(List Price: $19.95, Apple Jack; $395, IEEE488 interface; $495, Apple Fritter)*
Tecmar, Inc.
6225 Cochran Road
Cleveland, OH 44139
(216) 349-0600
CIRCLE 559 ON READER SERVICE CARD

Paper Tiger/Series 8000
Four models comprise this new microcomputer printer family—the 8010, 8020, 8050, and 8070. These dot-matrix printers feature a new printhead design that produces letter-quality printing.

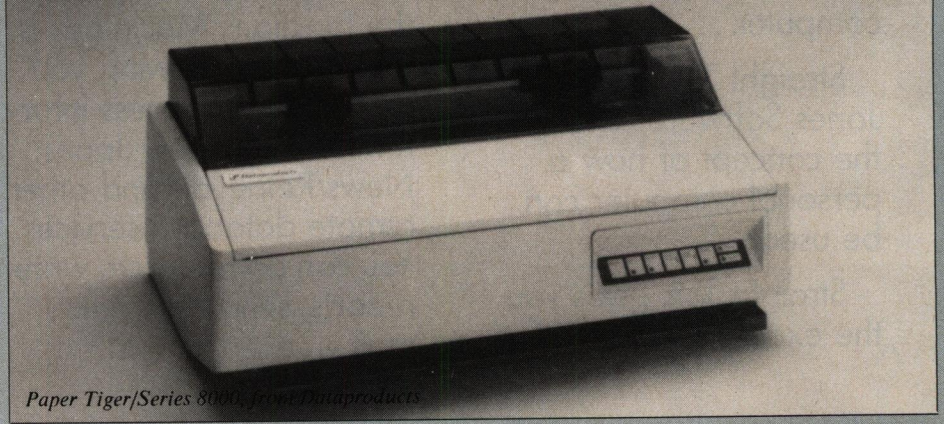
The 8050 and 8070 printers are 132-column color devices designed for use with micro-based business systems, such as the Macintosh and the Lisa. They can support word processing, business graphics, spreadsheets, and CAD/CAM and scientific uses.

The 80-column model 8010 and 132-column model 8020 printers are black-and-white units intended for use with "low end" business systems, such as the Apple II series.

The Paper Tiger/Series 8000 printers are compatible with a variety of software packages, including Apple Writer, WordStar, VisiPlot, ApplePlot, and Apple Business Graphics. *(List Price: $649, Model 8010; $849, Model 8020; $1895, Model 8050; $2395, Model 8070)*
Dataproducts Corporation
6200 Canoga Avenue
Woodland Hills, CA 91365
(213) 887-8451
CIRCLE 554 ON READER SERVICE CARD

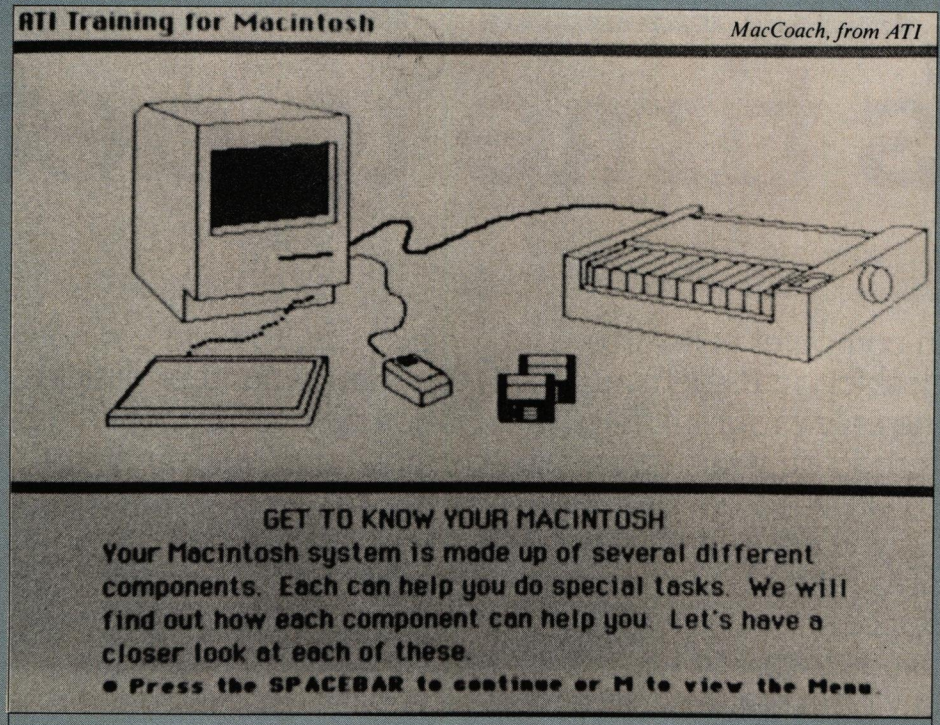
Straight Talk
Straight Talk, a new communications-software package for the Macintosh, enables users to communicate with Dow Jones News/Retrieval, other on-line databases, and other computers. The program makes extensive use of the mouse, pull-down menus, and the Macintosh desk accessories.

Using Straight Talk, users can send documents created with MacWrite to electronic-mail facilities located on the public databases or download information from various sources directly into MacWrite or other Macintosh software. *(List Price: $79)*
Dow Jones Software
Box 300
Princeton, NJ 08540
(800) 257-5114
CIRCLE 555 ON READER SERVICE CARD



Paper Tiger/Series 8000, from Dataproducts

A look at new products to complement your Macintosh or Lisa



Maccessories
Kensington Microware has introduced a line of Maccessories for the Macintosh. The Swivel is a lightweight lazy Susan that attaches to the bottom of the Macintosh with Velcro and allows you to adjust your viewing angle easily.

The Surge Suppressor has protective circuitry that stops surges and spikes and smooths power-line noise. Since the circuitry is built into the Macintosh's power cord, the Surge Suppressor fits easily into the Macintosh's carrying case.

The Maccessories Starter Pack consists of a Swivel, a Surge Suppressor, and an antistatic Dust Cover.

Additional Maccessories include a Macintosh-compatible printer buffer, a 300-bps Portable Modem, a Disk Pocket to hold disks, and a Cleaning Kit. *(List Price: $35, The Swivel; $49.95, The Surge Suppressor; $90, The Maccessories Starter Pack; $140, Modem; $30, Disk Pocket)*
Kensington Microware
251 Park Avenue South
New York, NY 10010
(212) 475-5200
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Mind Over Mac
This software for the Macintosh includes five games.

Master Code challenges you to break a secret code. Your mission in Destroyer takes place on the Aegean Sea, where you must track down and capture your opponent's ships. Third Dimension is a game of skill for all ages; On-the-Contrary works on your memory abilities; and Trivial Intrigue presents several categories of trivia questions, accompanied by high-resolution graphic screens. *(List Price: $49)*
Think Educational Software
16 Market Street
Potsdam, NY 13676
(315) 265-5636
CIRCLE 557 ON READER SERVICE CARD

MacForth
Based on the 68000 Forth product called Multi-Forth, MacForth is an interactive Forth development system designed to take advantage of the Macintosh's features. The system provides you with multitasking abilities with full 32-bit implementation and extensive use of menus, windows, and the Macintosh mouse.

MacForth is available in three levels—Level 1 offers a single license and single CPU; and Level 2 also includes an assembler and advanced graphics. The Developer's Kit; a 350-page manual; Trace, Debut, and Snapshot abilities; and the right to make 250 copies comprise Level 3. *(List Price: $149, Level 1; $249, Level 2; $2500, Level 3)*
Creative Solutions, Inc.
4801 Randolph Road
Rockville, MD 20852
(301) 984-0262
CIRCLE 558 ON READER SERVICE CARD

MacCoach
A two-part interactive training program for the Macintosh, MacCoach simulates the various functions you can perform on the Macintosh.

A major feature, MacCoach Help, enables you to transfer instructions and operating tips onto the Macintosh system disk as a permanent, quickly accessed, on-line reference.

Basic instructions provided by MacCoach include how to turn on the Macintosh; using the keyboard and the mouse; how to view the contents of a disk; formatting or initializing a disk; managing information with the desktop, windows, folders, and icons; how to save a document; and copying a document or disk. *(List Price: $75)*
American Training International
12368 Beatrice Street
Los Angeles, CA 90066
(213) 823-1129
CIRCLE 553 ON READER SERVICE CARD

MacEdge
Designed by educators to develop math and reading skills from the primary to junior-high level, MacEdge emphasizes concept development and numeral recognition. The programs use game formats, and high-resolution graphic screens and symbols support reinforcement at every level. *(List Price: $49)*
Think Educational Software
16 Market Street
Potsdam, NY 13676
(315) 265-5636
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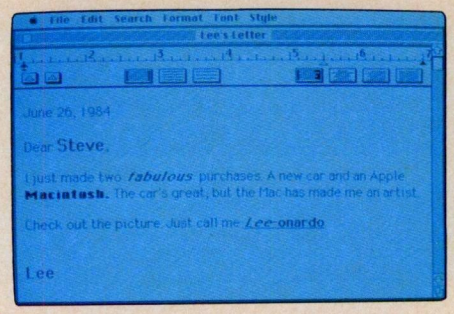
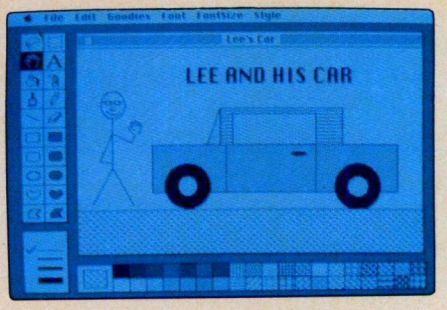




It's time to get

The reviews are in and everyone agrees. There's never been a personal computer that's easier or more fun to use than the Macintosh.™ Especially with terrific programs like MacWrite™ and MacPaint™ to get you started.

But if you really want to take full advantage of your Mac's tremendous abilities, you'll need to go a step further than just writing letters and painting pictures. You'll need some serious business tools to make you more productive.

And the first one to purchase is Habadex.

Desktop management has arrived.

Habadex is pioneering an entirely new category in computer software—desktop management. It's the only program that lets you do on your Mac what you now do on your desk. So you can put your address and phone directory, appointment calendar, things-to-do list—and any other paperwork that clutters your desk and your mind—right into your Mac.

And because Habadex was designed specifically for the Macintosh, it incorporates all of the same graphic capabilities that have made Apple's new computer so incredible. And incomparable.

A data base based on your own needs.

Habadex lets you create and sort hundreds of records. You can arrange the large number of fields however you choose. By first name, last name, company, category, zip code, etc. You can even rename fields, and rearrange or change information easily for complete flexibility.

You've found your calling.

Habadex lets you create and arrange an entire phone directory within your data base. It dials direct and long-distance calls, automatically inserting your O.C.C. like Sprint or MCI. It has a quick-dial feature for storing commonly-called personal or emergency numbers. And it works with the inexpensive HabaDialer or your current modem.

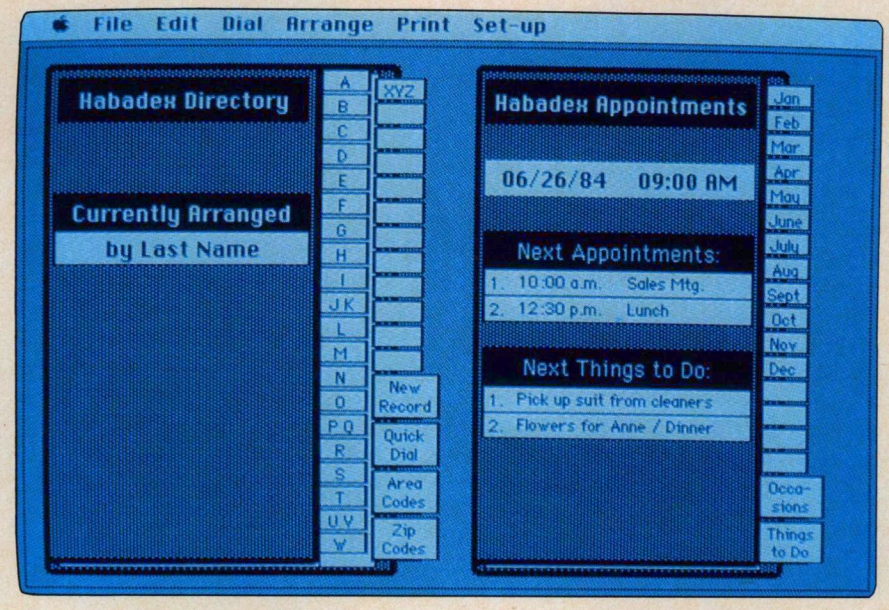
Habadex is a trademark of Haba Systems, Inc., 15154 Stagg Street, Van Nuys, California 91405-1025, (818) 901-8828. Macintosh is a trademark licensed to Apple Computer, Inc. ©1984 Haba Systems Inc.

OK Mac. down to business.

It gets you through the day. Every day.

Habadex is also one of the most complete calendars you'll ever need. It provides monthly overviews and day-at-a-glance scheduling, through December 1985. Lets you keep track of all your appointments and automatically updates them throughout each day. Even leaves room for valuable travel and expense information.

It also features a things-to-do list which is automatically updated when you check items off. Plus complete area code and zip code directories with ranges for all cities in the United States and Canada.



Print it your way.

Habadex also prints mailing labels and custom lists in any format and size of your choosing. It mail merges form letter text with your data base and prints them for any or all of your records —in virtually any order, arrangement or quantity. And in your choice of fonts.

Are you ready to get more from your Mac than just words and pictures? Then you're ready for Habadex. It's the serious business tool that still lets you have some serious fun.

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Making Apples more tempting than ever.™

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Meet Your New Business Team. Macintosh & Davong.

Apple's new Macintosh™ is the most exciting development in personal computing since the original Apples started it all.

Teamed with Davong peripherals, the incredibly easy to use Macintosh becomes a powerful, flexible and expandable business tool.

Available at more than 1,000 Davong dealers nationwide is the new Davong Mac Disk system, providing from 5 to 32 megabytes of hard disk storage. Mac Disk gives you the increased capacity and enhanced functionality you need for your business applications. All at a very reasonable price and with no sacrifice in the speed and ease of use built into your Macintosh.

And coming very soon from Davong are a 28 megabyte streaming tape backup system, for fast and secure backup of your files, and a multi-tasking **local area networking system** to allow all of the Macintoshes in your organization to share information, programs, and the advantages of Mac Disk.

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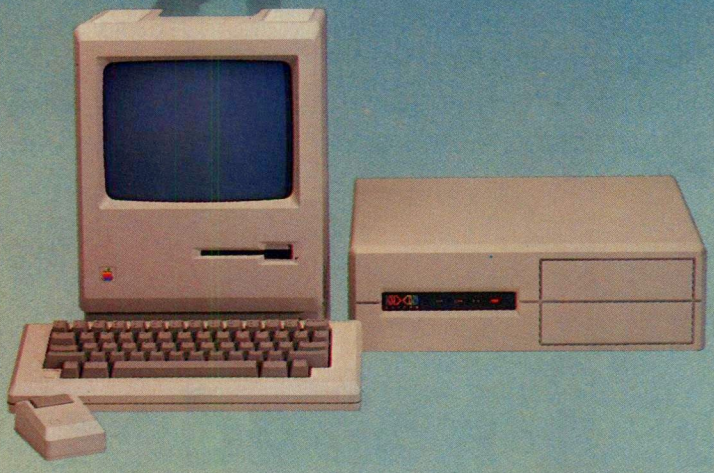

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HAYES

(1) Smartmodem 1200 "standalone modem"
(2) Serial Card
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(4) Communications Software
Total List Price: $957

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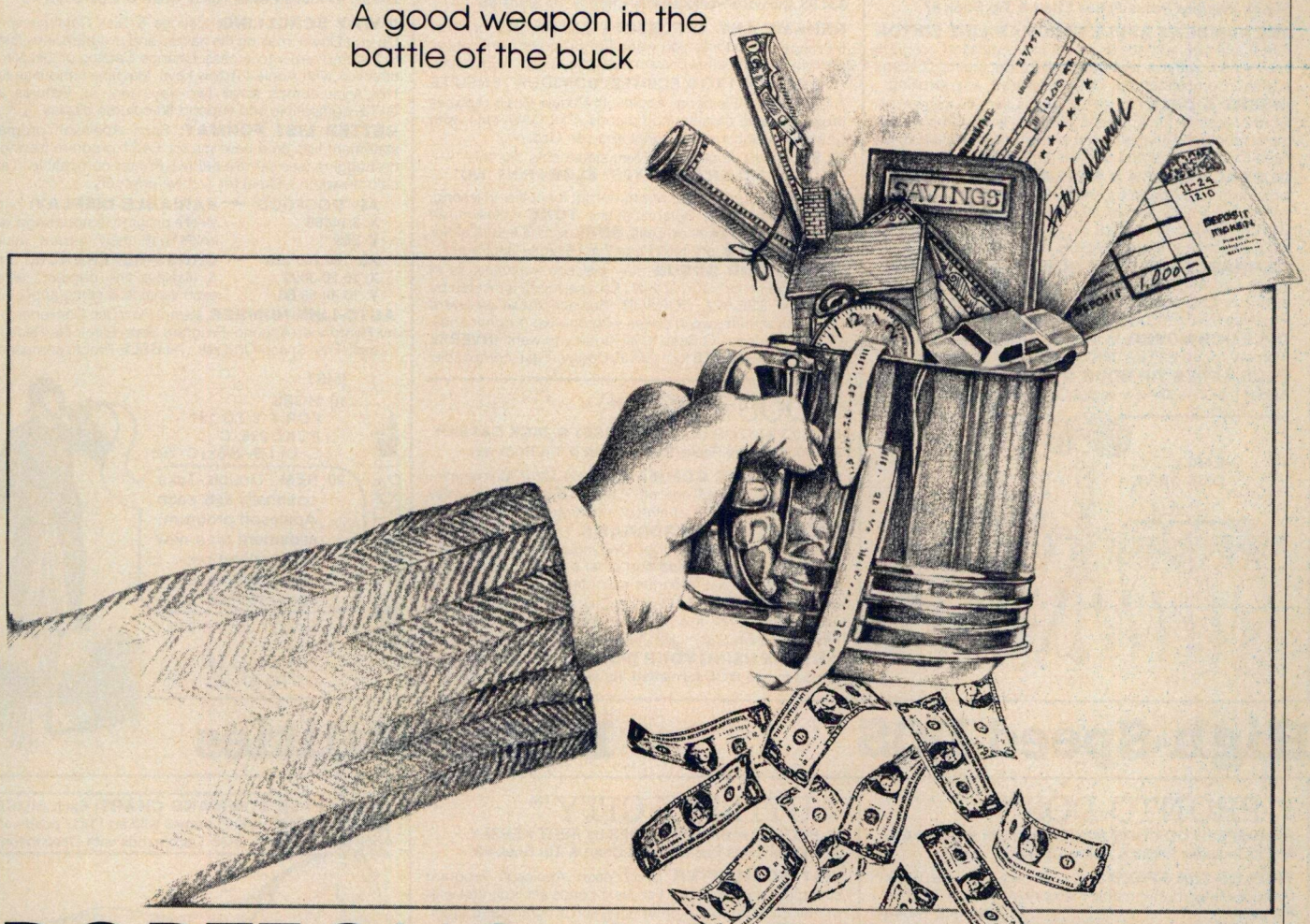
CIRCLE 122 ON READER SERVICE CARD

MONEY MATTERS
BY KENNETH M. LANDIS

A good weapon in the battle of the buck



PORTFOLIO ACCOUNTING

Welcome to Money Matters, a new monthly column that focuses on how your Apple can help you make, save, and use your money more effectively.

You're probably asking yourself, "Who is this guy, and how can he help me?" I come to *A+* from *Softalk*. For the last three years I was the investment columnist for that magazine. In *Softalk*, I looked only at your Apple and its relationship to your money as they pertained to the capital markets—the stock market, the bond market, and the commodity market.

In Money Matters, I am going to look at those kinds of investments, as well as collectibles, tax shelters, taxes, real estate, home budgeting systems, personal financial software, and so on. You name it, if it's considered an investment, analyzes one, or shows you a way to save money, I will discuss it. Just think of me as the Sylvia Porter of the computer set.

Usually, the majority of people's appreciable assets can be found in the value of their homes; their cash deposits; or the stocks, bonds, T-bills, and other marketable securities that they own. If you are one of these "average" Americans, you have a problem: With the various capital markets changing so frequently, along with your personal finances, you can't easily keep track of what you own and what it's worth and, at the same time, find new investments.

If it's considered an investment, analyzes one, or shows you a way to save money, I will discuss it. Just think of me as the Sylvia Porter of the computer set.

Because both this distribution of individuals' assets and these problems in handling investments are so common, hundreds of software systems have been designed to help track and/or analyze the performance of capital assets.

One such system is the Micro Portfolio Management System (PMS) from the Boston Company. Micro PMS consists of three modules—an accounting module, a stock-analysis module, and a Dow Jones News/Retrieval module for updating the prices of the securities in your portfolio. Let's see what Micro PMS can do for you.

The job of tracking your assets goes to the accounting module, which is called Portfolio Accounting I. Whereas you view all of your holdings (your securities) as one portfolio, Portfolio Accounting I can view them as different portfolios. This approach is helpful for

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GLOBAL PROGRAM LINE EDITOR by NEIL KONZEN
$49.95: Includes Peeks/Pokes Chart & Tip Book #7

THE NUMBER 1 APPLE PROGRAM LINE EDITOR GPLE lets you edit 40- or 80-column Applesoft program lines *FAST* without awkward cursor-tracing or "Escape editing". Compatible with Double-Take's 2 way scrolling.

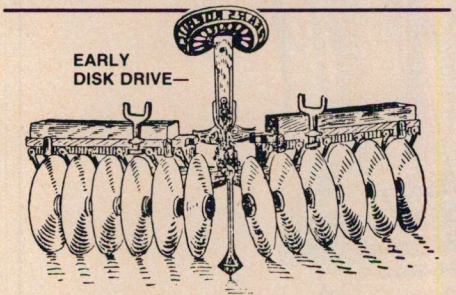
INSERT & DELETE: GPLE works like an in-memory word processor for Applesoft program lines. Simply jump the cursor to the change-point and insert or delete text. No need to trace to the end of a line before hitting Return.

GLOBAL SEARCH & REPLACE: Find any word or variable in your programs, *FAST*. For example, find all lines containing a GOSUB, or all occurrences of variable XY. REPLACE ANY VARIABLE or word with any other. For example, change all X's to ABC's, or all "Horses" to "Cows".

DEFINABLE ESC FUNCTIONS: Define ESC plus any key to perform any task. For example, **ESC-1** can catalog drive 1, or **ESC-N** could type an entire phrase or subroutine. *Anything* you want, *whenever* you want.

GPLE DOS MOVER: Move DOS 3.3 & GPLE above main memory for an EXTRA **10K** of programming space.

PLUS APPLE TIP BOOK #7: Learn more about your Apple! Includes all-new useful GPLE tips and tricks.



☐ BEAGLE BASIC™ (REQ. 64K)

APPLESOFT ENHANCER by MARK SIMONSEN
$34.95: Includes Peeks/Pokes Chart & Tip Book #6

RENAME ANY APPLESOFT COMMAND or Error Message to anything you want. For program clarification, encryption/protection or even foreign translation. Example:

10 POUR X=1 TO 3: ECRIVEZ "BONJOUR": ENSUITE

RAM Applesoft is *better* Applesoft! Beagle Basic replaces those obsolete cassette commands (SHLOAD, etc.), with powerful new commands that you can USE—

ELSE follows Applesoft If-Then statements, like this:

IF X=2 THEN PRINT "YES": ELSE PRINT "NO"

HSCRN reads the color of a hi-res dot for collision testing, **SWAP** exchanges variable values, **TONE** writes music without messy Pokes or Calls, **SCRL** scrolls text in *either* direction, **TXT2** lets Text Page 2 act exactly like Page 1...

GOTO AND GOSUB may precede variables, as in "GOSUB FIX" or "GOTO 4+X". Escape-mode indicated by a special ESCAPE CURSOR. Replace those awkward Graphics screen-switch pokes with one-word commands. Change your ctrl-G Beep to any tone you want. **INVERSE REM STATEMENTS** too! GPLE/Double-Take compatible.

☐ DOS BOSS™

DOS 3.3 EDITOR by BERT KERSEY & JACK CASSIDY
$24.00: Includes Peeks/Pokes Chart & Tip Book #2

RENAME DOS COMMANDS and Error Messages—DOS 3.3's "Catalog" can be "Cat"; DOS's cryptic "Syntax Error" can be "Oops" or almost *anything* you want it to be.

PROTECT YOUR PROGRAMS. Unauthorized Save-attempts can produce "Not Copyable" message, or *any* message. **List-Prevention** and other useful Apple tips and tricks. Plus one-key program-execution from catalog.

CUSTOMIZE DOS. Change Disk Volume headings to your message or title. Omit or alter catalog file codes. Fascinating documentation, tips & educational experiments.

ANYONE USING YOUR DISKS (booted or not) will be forced to use DOS formatted the way YOU designed it.

☐ DOUBLE-TAKE™ (DOS 3.3 *and* ProDOS™)

2-WAY SCROLL/MULTI-UTILITY by MARK SIMONSEN
$34.95: Includes Peeks/Pokes Chart & Tips Chart #1

2-WAY SCROLLING: Listings & Disk Catalogs scroll Up *and* Down, making file names and program lines faster to find and easier to access. Change Catalog or List scroll-direction with Apple's Arrow keys. Machine Language and Hex/Ascii dumps scroll two-ways too. All features are GPLE compatible and support 80-column display.

BETTER LIST FORMAT: Each Applesoft program statement lists on a new line for *FAST* program tracing & de-bugging (see sample below). Printer-compatible in any column-width—Great for archive printouts.

A$="DOGFOOD" ← **VARIABLE-DISPLAY:** prints
X=3.14159 all of a program's strings and vari-
Y=255 ables with their current values.

A$: 100 200 250 ← **CROSS-REFERENCE:** Sorts
X: 10 20 3000 & displays line numbers where
Y: 10 40 55 60 each variable & string appears.

AUTO-LINE-NUMBER, instant Hex/Dec Converter, better Renumber/Append, Program Stats, Eliminate/Redefine Cursor, Free Space-On-Disk... All GPLE/Pronto compatible.

2-WAY VIDEO SCROLLING

```
]LIST
10 HGR2
   : FOR Y=0 TO 191
   : POKE 228, C
   : C=C+1/9-256*(C=255)
20 REM "Double-Take
   optionally lists each
   Applesoft program
   statement on a new
   line, making pro-
   gram code much
   easier to read."
30 HPLOT 0,Y TO 279,Y
   : NEXT Y
   : POKE 2053,58
   : GOTO 10
```

High-Speed DOS

☐ PRONTO-DOS™

HIGH-SPEED DOS/DOS-MOVER by TOM WEISHAAR
$29.50: Includes Peeks & Pokes Chart

TRIPLES THE SPEED of disk access and frees 10,000 bytes of extra programmable memory by moving DOS 3.3.

Function	Normal	Pronto
BLOAD HI-RES IMAGE	10 sec.	3 sec.
LOAD 60-SECTOR PROGRAM	16 sec.	4 sec.
SAVE 60-SECTOR PROGRAM	24 sec.	9 sec.

(Text-files no change) **Bload language cards** at *triple speed*. Create bootable high-speed disks with the normal INIT command. Compatible with *all* commands, GPLE, Double-Take, DOS Boss, DiskQuik & most unprotected programs.

MOVE DOS 3.3 above main memory to free *10,000 bytes* of memory for your programs (64K required to move DOS).

15 EXTRA SECTORS per disk. Catalog Free-Space is displayed on the screen every time you Catalog a disk.

NEW TYPE-COMMAND ("TYPE filename") prints the contents of any Text File on-screen or to your printer.

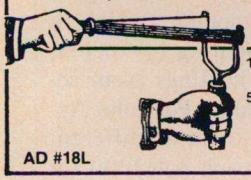
☐ DISKQUIK™ (Requires IIe with 128K)

DISK EMULATOR by HARRY BRUCE & GENE HITE
$29.50: Includes Peeks & Pokes Chart
Requires EXTENDED 80-column card (128K)

ACTS LIKE A DISK DRIVE in Slot 3, but super-fast and silent! Enjoy many of the benefits of another drive at 1/10th the cost. Catalog with "CATALOG, S3" command. Access all kind of files in RAM with normal DOS commands.

SILENT AND FAST: Since no moving parts are involved, DiskQuik operates at super-high speeds. See to believe! Your Apple IIe's Extended 80-column Card (required) holds about half the amount of data as a 5¼" floppy!

MANY USES: For example, load often-used files like FID into RAM when you boot up, so they are always available when you need them. Copy files from RAM onto disk and vice versa, just as if a disk drive were connected to slot #3.



COMPATIBLE with all normal DOS procedures.

```
1234 TEXT: HOME: NORMAL:
     PRINT CHR$(21)
5678 R=INT(RND(1)*10): N(R)=
     N(R)+1: VTAB R+9: HTAB
     40: PRINT CHR$ (124); SPC
     (N(R)); CHR$(R+65); :
     IF PEEK(36) THEN 5678
```

AD #18L

Multi-Utilities

☐ UTILITY CITY™

21 PROGRAMMING UTILITIES by BERT KERSEY
$29.50: Includes Peeks/Pokes Chart & Tip Book #3

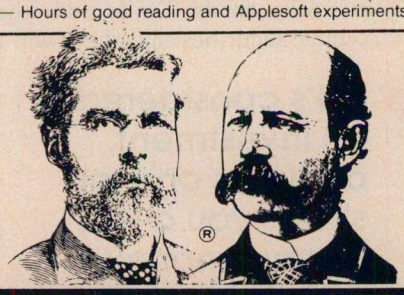
LIST FORMATTER prints each Applesoft program statement on a new line. For-Next Loops are indented with printer Page Breaks. A great Applesoft program de-bugger.

MULTI-COLUMN CATALOGS to your printer, with or without sector and file codes. Organize your disk library.

INVISIBLE AND TRICK catalog File Names. Put invisible functioning commands in Applesoft programs too.

21 UTILITIES TOTAL, including auto-post Run-number & Date in programs, alphabetize/store info on disk, convert dec to hex or Int to FP, protect and append programs, dump 40-column text to printer. And More.

LEARN PROGRAMMING TRICKS: LIST-able programs and informative documentation. Includes Tip Book #3— Hours of good reading and Applesoft experiments.

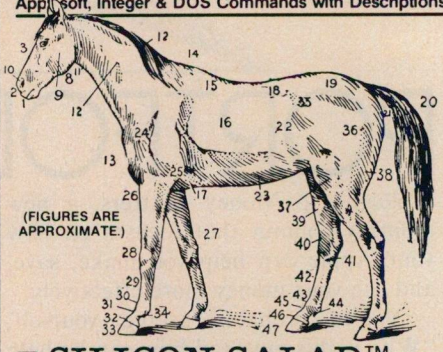


Beagle Bros
Micro Software Inc.

3990 OLD TOWN AVENUE, SUITE 102C
SAN DIEGO, CA 92110 / 619-296-6400

Attention Applers: Most Apple dealers and software stores have Beagle Bros products on their shelves. If you can't find the disk you want, bug the manager—he can have *any* of our products in his store for you within a couple of days.

FREE APPLE COMMAND CHART: Each SILICON SALAD and TIP DISK #1 comes with an 11x17 poster of all Applesoft, Integer & DOS Commands with Descriptions.



☐ SILICON SALAD™

WITH TIP DISK #2 by BERT KERSEY & MARK SIMONSEN
$24.95: With Peeks/Pokes Chart & Apple Command Chart

MANY MINI-UTILITIES: Program Splitter makes room for hi-res pix in large Applesoft programs, **Disk Scanner** finds bad disk sectors, **Key-Clicker** adds subtle sound as you type, **DOS-Killer** adds two tracks of space to your disks, **2-Track Cat** allows up to 210 DOS 3.3 file names per disk, **Text Imprinter** converts text-screen text into hi-res text, **Onerr Tell Me** prints the appropriate error message but continues program execution, **Text Screen Formatter** formats and converts text layouts into Print statements... plus much more Apple wizardry from the boys at Beagle Bros.

MORE TIPS ON DISK: Over 100 programs from Beagle Bros Tip Books 5, 6 and 7; *and* from Tip Chart #1.

TWO-LINERS TOO: From our customers around the world—and elsewhere. New tricks for your old Apple!

☐ TIP DISK #1™

100 TIP BOOK PROGRAMS ON DISK by BERT KERSEY
$20.00: With Peeks/Pokes Chart & Apple Command Chart

100 LISTABLE PROGRAMS from Beagle Tip Books 1-4. Make your Apple do things it's never done! All 100 programs are LISTable and changeable for experimentation. Two-Liners too, plus a free *Apple Command Chart*.

NEW! Apple® Graphics Utilities

☐ BEAGLE GRAPHICS™

DOUBLE HI-RES GRAPHICS by MARK SIMONSEN
$59.95: Includes Peeks & Pokes Chart
Requires Apple IIc (or IIe with EXTENDED 80-col. card).

560-WIDE WITH 16 COLORS! Beagle Graphics gives your 128K-Apple (required) a full range of colors plus *double* high resolution—560 x 192 pixels. All Applesoft hi-res functions, including shape tables, are supported.
NEW COMMANDS let you draw fast circles, ellipses and rectangles from the keyboard or from your programs.
FAST COLOR FILL fills any outline with one of 16 solid colors or 256 color mixes (usable in your programs).
PROGRAM & PICTURE-CONVERTERS change your existing Applesoft programs *and pictures* to double hi-res. "Double-ize" *Apple Mechanic* shape table programs too!
DOUBLE-PLOT PROGRAM lets you draw and manipulate pictures in double hi-res. Add type to pix too. Move sections of images to either page. Save pictures to disk.
HI-RES TRICKS: Amazing stuff— any portion of a picture may be rotated, flopped, moved, inverted, superimposed, scrunched or even SAVED to disk. Saving image-portions conserves disk space.

☐ TRIPLE-DUMP™

SINGLE/DOUBLE HI-RES "PRINT-ANYTHING" UTILITY
$39.95: Includes Peeks & Pokes Chart

PRINT ANY SCREEN IMAGE on your dot-matrix (graphics-capable) printer— Hi-Res, Lo-Res, **Double Hi-Res,** Medium-Res, as well as 40 **and 80-Column Text**. All print functions may be used in your Applesoft programs and disks. Don't settle for a "locked up" printer-dump program.
SPECIAL EFFECTS: Crop, rotate, enlarge, distort, invert... Preview pictures on the screen before you print.
BANNER MAKER: Make impressive 8"-high signs and banners for your family, home or office. Type any message—no length limit—and let your printer do the work!

☐ ALPHA PLOT™

STANDARD HI-RES GRAPHICS UTILITY
by BERT KERSEY & JACK CASSIDY
$39.50: Includes Peeks/Pokes Chart & Tip Book #4
(Alpha Plot offers 6-color 280-pixel resolution and requires only 48K; see Beagle Graphics for 128K double hi-res.)

DRAW IN HI-RES on both pages using easy keyboard commands. Pre-view lines before plotting. Use solid or mixed colors and Reverse (background opposite). One-keystroke circles, boxes and ellipses, filled or not. All pictures are Save-able to disk for access by your Applesoft programs.
COMPRESS HI-RES DATA to 1/3 disk-space, allowing 3-times the number of hi-res pictures per disk (avg. figures).
MANIPULATE IMAGES: Superimpose pictures or *relocate* sections of images anywhere on either hi-res page.
HI-RES TYPE: Add variable-size color & b/w text to your pictures. Type *anywhere* with no htab/vtab limits. Type sideways too, for Charts & Graphs. Includes Tip Book #4.

☐ FLEX TYPE™

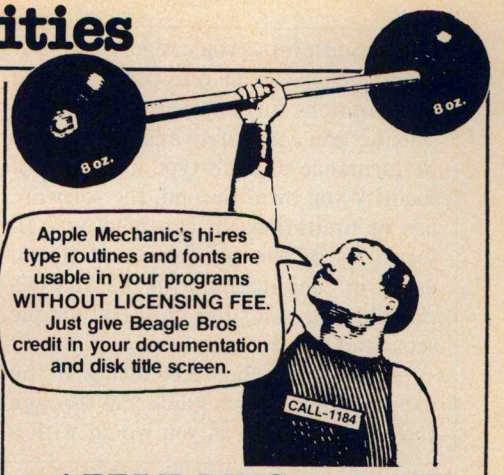
FLEXIBLE-TEXT UTILITY by MARK SIMONSEN
$29.50: Includes Peeks & Pokes Chart

PUT VARIABLE-WIDTH TEXT on both hi-res screens with normal Applesoft commands (including HTAB 1-70). Normal, expanded & compressed text with no extra hardware. (70-column text requires b/w monitor, not a tv).
COMBINE TEXT & GRAPHICS. Run existing Applesoft programs with Flex. GPLE/Double-Take compatible.
DOS TOOL KIT® font compatibility. Access up to 9 fonts in memory. Text editor lets you redesign text characters.

☐ FRAME-UP™

FAST APPLE DISPLAY UTILITY by TOM WEISHAAR
$29.50: Includes Peeks & Pokes Chart

PROFESSIONAL PRESENTATIONS: Turn existing Hi-Res, Lo-Res & Text pix into Apple "slide shows". *FAST* 2½-sec. hi-res loading! Paddle or Keyboard-advance frames.
UNATTENDED SHOWS optional— each picture arranged and pre-programmed to display 1 to 99 seconds. Text Screen Editor creates black & white text "slides" ; lets you key-in type "live" during shows. Mail copies of presentations-on-disk to friends & associates (or home to Mom!).



☐ APPLE MECHANIC™

HI-RES SHAPE EDITOR & FONTS by BERT KERSEY
$29.50: Includes Peeks/Pokes Chart & Tip Book #5

SHAPE EDITOR: Keyboard-draw hi-res shapes for animation in your Applesoft programs. Easy "List & Learn" Applesoft demos teach how to do hi-res animation as well as professional-looking hi-res Charts and Graphs.
HI-RES FONTS: Access & create proportionally-spaced hi-res type; each character totally re-definable. Six complete fonts are included on the disk (4 large & 2 small).
MORE: Useful music, text and hi-res tricks for your Applesoft programs. Clear educational documentation and step-by-step instructions for writing graphics programs.

APPLE MECHANIC HI-RES ☐ TYPEFACES™

26 FONTS FOR APPLE MECHANIC by BERT KERSEY
$20.00: Includes Peeks & Pokes Chart

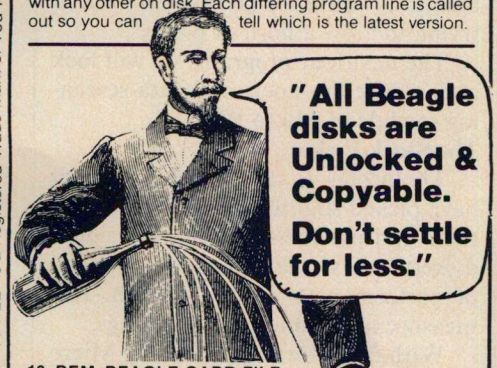
26 NEW FONTS for use with Apple Mechanic programs. Many different sizes and typestyles, both ordinary and *Artistic*. Every character—from A to Z to "★" to "□"—of every typeface—from "Ace" to "Zooloo"—is re-definable to suit your needs. All type is *proportionally spaced* for a more professional appearance. People *do* notice the difference!

Disk Librarian NEW!

☐ FATCAT™

PERSONAL DISK LIBRARY by ALAN BIRD
$34.95: Includes Peeks & Pokes Chart

MULTIPLE-DISK CATALOG: FATCAT reads all of your DOS 3.3 and ProDOS™ disks into one or more "Master Catalogs" that can be searched, sorted and printed. Update at any time by simply reading in new or altered disks.
ALPHABETIZE FILE NAMES: Sort your DOS 3.3 and ProDOS disk catalogs alphabetically, by file name, type, etc., to make files easier to find. Re-locate individual file names too. Find files *fast* every time you CATALOG. This feature alone is worth the price of FATCAT!
COMPARE FILES: Compare any program in memory with any other on disk. Each differing program line is called out so you can tell which is the latest version.




```
10 REM BEAGLE CARD FILE
20 HGR: HGR2: POKE 232, 120: POKE 233, 64: POKE
   16504, 7: SCALE=80: P=16: X=99: FOR R=0 TO 31:
   P=P*-1: POKE 230, 48+P
30 FOR Y=0 TO 1: ROT=ABS(64*Y-R): HCOLOR=3:
   FOR A=1 TO 25: DRAW 1 AT X+2*A, X: NEXT
40 HCOLOR=0: DRAW 1 AT X, X: ROT=32: DRAW 1:
   DRAW 1 AT X, X: NEXT Y, R
50 FOR A=0 TO 20: FOR B=0 TO 1: POKE 49237-B,0:
   X=PEEK(49200): FOR C=1 TO 6*A
60 NEXT C, B, A: GOTO 50
```

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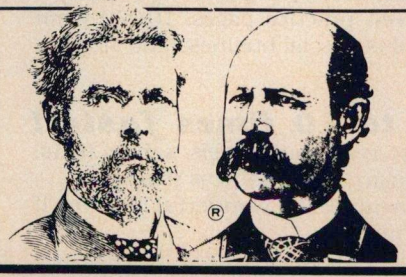
Beagle Bag!

☐ BEAGLE BAG™

12 APPLE GAMES ON DISK by BERT KERSEY
$29.50: Includes Peeks & Pokes Chart
Apple software customers recently voted BEAGLE BAG to Softalk's "Most Popular Software" list for 1983.

COMPARE BEAGLE BAG with any one-game locked-up disk on the market today. All 12 games are a blast, the price is right, the instructions are crystal clear, *and* the disk is COPYABLE. You can even *change* the programs or list them to learn programming tricks by seeing how they work.
TWELVE GAMES that *last*— TextTrain, Wowzo, Magic Pack, Buzzword, Slippery Digits, and many many more...
EXCELLENT REVIEWS—Read Jan-83 *Softalk*, pg.148.



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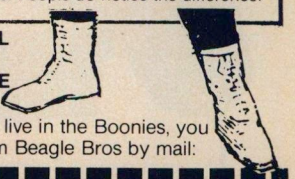
Attention Dealers: Beagle Bros products rank consistently high on software best-seller charts, and captured FOUR spots on *Softalk's* 1983 Top-30 Most-Popular List (all categories). Telephone any Apple software distributor for fast delivery.



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Or, if you happen to live in the Boonies, you can buy directly from Beagle Bros by mail:

RUSH the following disks by First Class Mail:

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☐ A.M.Typefaces	20.00	☐ Frame-Up	29.50
☐ Beagle Bag	29.50	☐ GPLE	49.95
☐ Beagle Basic	34.95	☐ ProntoDOS	29.50
☐ Beagle Graphics	59.95	☐ Silicon Salad	24.95
☐ DiskQuik	29.50	☐ Tip Disk #1	20.00
☐ DOS Boss	24.00	☐ Triple-Dump	39.95
☐ Double-Take	34.95	☐ Utility City	29.50

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CIRCLE 249 ON READER SERVICE CARD

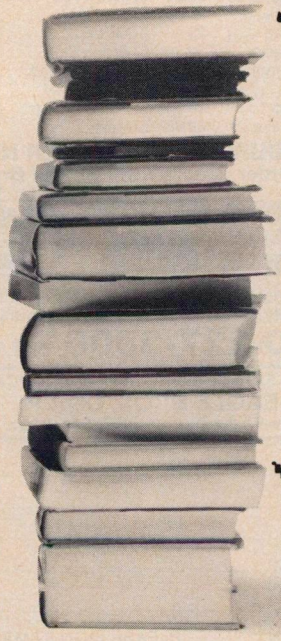
two reasons. First, you can have all your high-tech stocks in one portfolio and your options in another. Using this scheme, you can isolate and analyze the performance of each type and class of security you own. Second, the software has its limitations. It can hold only 50 securities in one portfolio, and if you use it in conjunction with the analysis module, you can store only 100 unique securities per diskette.

To run Portfolio Accounting I, you use its menus, which guide you through the program. Just as you would with a human accountant, you need to tell Portfolio Accounting I everything about your portfolio, including the type of transaction (straight purchase, sale, short sale, short cover, deposit or withdrawal of cash, dividend income, or an expense); the number of units; the cost; the commission charged by the broker for consummating the transaction; and, if you only own part of the portfolio, the percentage that you own. (Micro PMS uses this information to give you pro rata portfolio valuations, a useful feature for investment clubs.)

READ AT COMPUTER SPEED!

Super Speed Reading, by the authority who taught speed reading to the Kennedy White House staff, quickly teaches you to read 2 to 10 times faster!

It's a skill you (and your children) can learn just as you learned to ride a bike or drive a car. You're taken from one skill plateau to another, until you reach the high speeds you want. Perhaps 500, 1000, or 3000 words per minute.



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You'll find learning is especially easy thanks to on-screen graphics, a choice of 3 type styles, and upper/lower case letters. In addition, you'll enjoy the 120 on-screen practice pages; 10,000 wpm Flash Practice plus special business and student sections.

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At computer stores, or from: **Magnum** SOFTWARE

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*Apple II, II+, IIe are Apple Computer, Inc. TM's.

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Appraisals

Once Portfolio Accounting I knows what you have bought; sold; given away; or, if you're lucky enough, received, it's ready to get down to work. To keep the portfolio current, you can enter prices, using the Dow Jones retrieval module, the local newspaper, or the *Wall Street Journal*.

By simply pressing a few keys, you can get a transaction summary by portfolio, a realized gain/loss report, and a report that consolidates your positions in the same security across all portfolios. Try accomplishing that with just a few keystrokes on a calculator!

In addition to using the program's fixed reports, you can design your own reports, using Portfolio Accounting I's powerful reporting capability. Just like a successful politician, Portfolio Accounting I can be many things to many people. You can incorporate in a report any piece of information about a security or computed values, such as gain/loss, annual income, and dividend yield.

Just like a successful politician, Portfolio Accounting I can be many things to many people.

If you just want to take a quick look, you can put the report on the Apple's display. For more leisurely examination, you can print out the report.

The more information you can cultivate from your portfolio, the better the odds are that you will make money, rather than lose it. Portfolio Accounting I is a good set of financial implements to have, especially if you're trying to grow a horn of plenty.

The next four programs we will look at comprise the stock- and data-screening module of Micro PMS.

The Stock Picker

The people at the Boston Company have picked slightly more than 1500 of them and put their vital statistics on a diskette—a virtual magnetic almanac of performance, history, growth, risk measurements, and quality ratings.

With this information and the Micro PMS stock-screening (filtering) program, you use your Apple to find companies that fit your investment style or strategy. The stock-filtering program transforms your Apple into your personal automated security analyst.

You can define up to ten criteria for

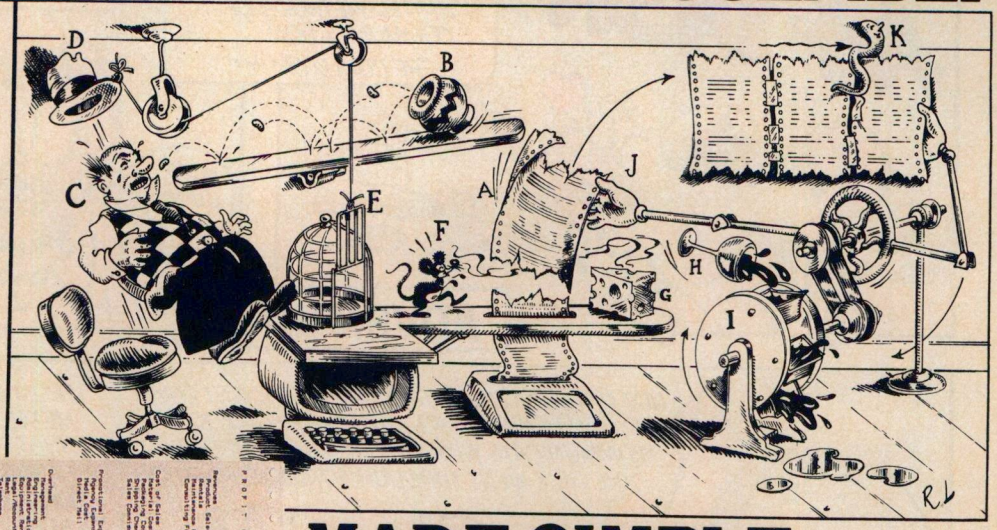
SIMPLIFIED SPREADSHEET ASSEMBLY

RISING SPREADSHEET (A) KNOCKS MEXICAN JUMPING BEANS (B) INTO MOUTH OF NEUROTIC MAN (C) WHO IS SO DISCOMBOBULATED THAT HIS HAIR STANDS ON END, DISLODGING HAT (D) WHICH OPENS CAGE (E) AND RELEASES EPICUREAN MOUSE (F).

MOUSE, INSPIRED BY SCENT OF PERFECTLY AGED CAMEMBERT CHEESE, GNAWS THROUGH SPREADSHEET, ONLY TO DISCOVER HE HAS BEEN FOOLED BY AROMA OF OVER-RIPE GORGONZOLA (G).

IN A FIT OF PIQUE HE SPILLS VINTAGE WINE (H) INTO WATER-WHEEL (I) WHICH TURNS PULLEY THAT CAUSES GLOVE (J) TO GRASP SPREADSHEET AND MOVE IT TO TAPING AREA.

SHEET IS TAPED SECURELY IN PLACE BY TRAINED ADHESIVE TAPE WORM (K).



MADE SIMPLE.

Now you can save time, aggravation, adhesive tape, and Gorgonzola cheese by following one simple direction—Sideways. It's the unique software program that lets you output all the spreadsheet columns you need, all on one continuous page, all with one print command—and all for only $60!

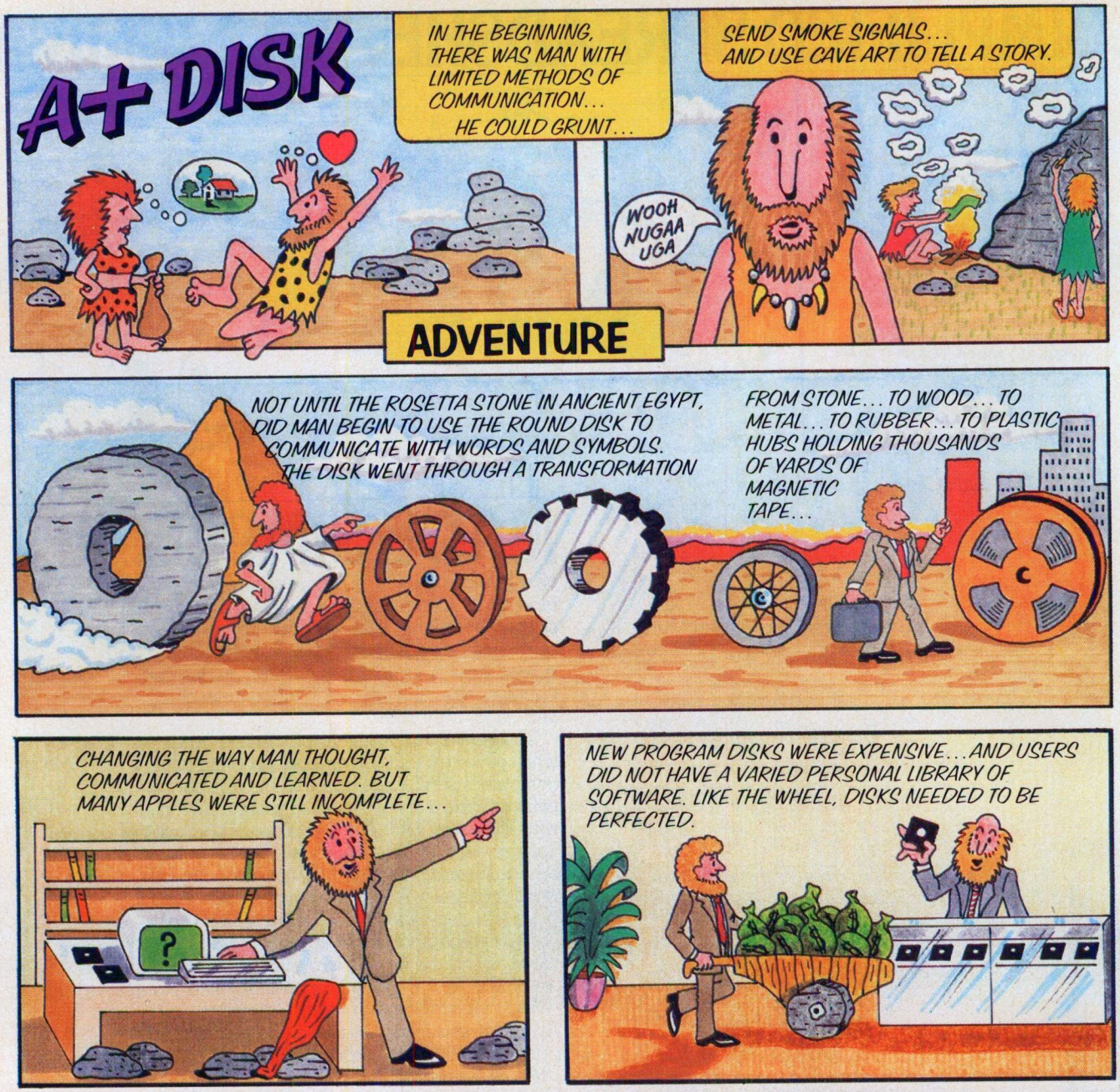
The New York Times calls Sideways "one small program that solves a big problem for computer users". You'll agree. Sideways can print as wide a spreadsheet as you can invent with VisiCalc,® Multiplan,® or other programs. You can also use it for those far-into-the-future schedules and pert charts you create with your word processor. And there's more—Sideways gives you complete control over margins and character spacing, and lets you choose from a variety of type sizes. For any wide text file, for dozens of uses, the way to go is Sideways.

You can go Sideways today with your Apple® II and a wide variety of dot matrix printers, including Epson,® Okidata, Apple DMP, and Imagewriter. Ask for Sideways at leading computer stores. Or mail a $60 check to Funk Software, P.O. Box 1290, Cambridge, MA 02238. (617) 497-6339. MC/Visa accepted. Send no Mexican jumping beans, please.

SIDEWAYS™

FOR EASY-READING HARD COPY

CIRCLE 154 ON READER SERVICE CARD



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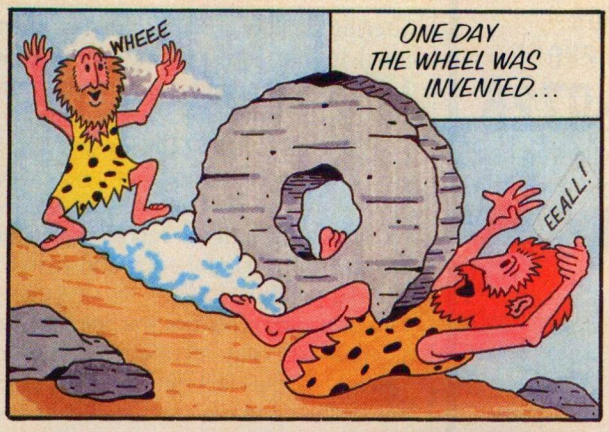
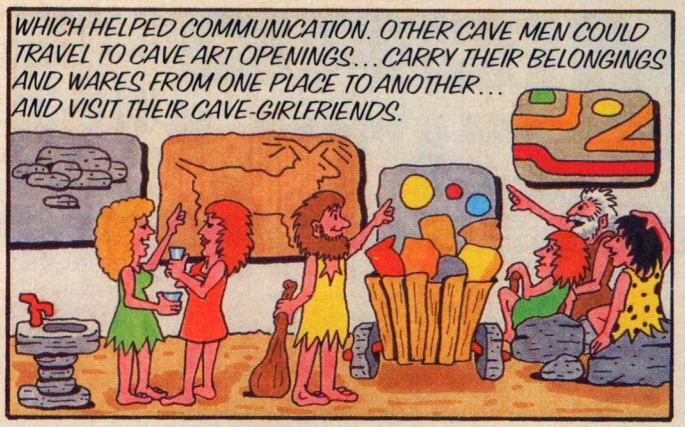
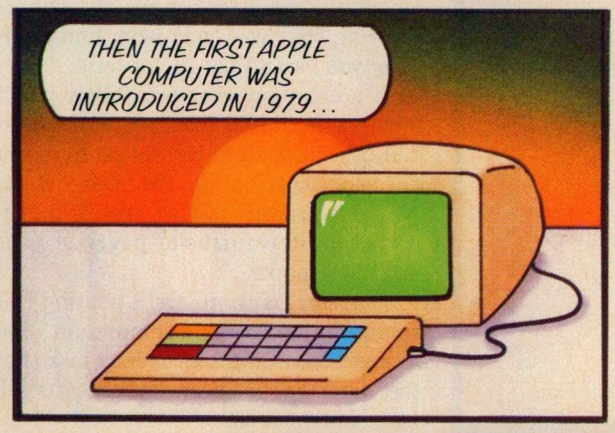
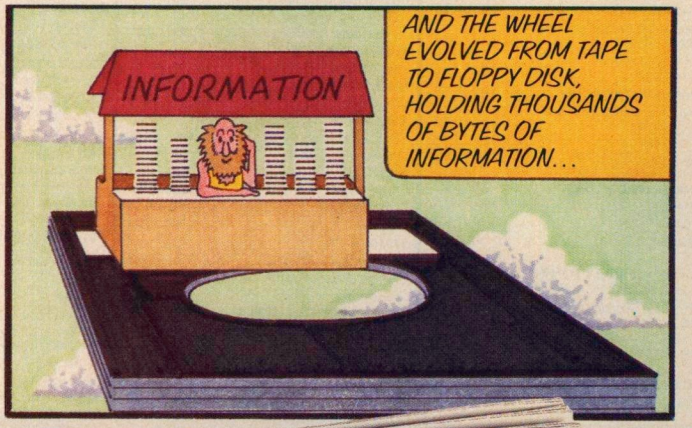
Product Specifications:

- Programs will run on Apple II series computers and most compatibles under AppleDOS 3.3, requiring a minimum of 48K.
- Most programs will be written in Applesoft BASIC, however, some machine language code may be used.
- All disks are fully guaranteed to run. Damaged or faulty disks will be replaced at no charge.
- All programs and documentation are copyrighted by Ziff-Davis Publishing Company. All rights of reproduction in all forms and media strictly observed.









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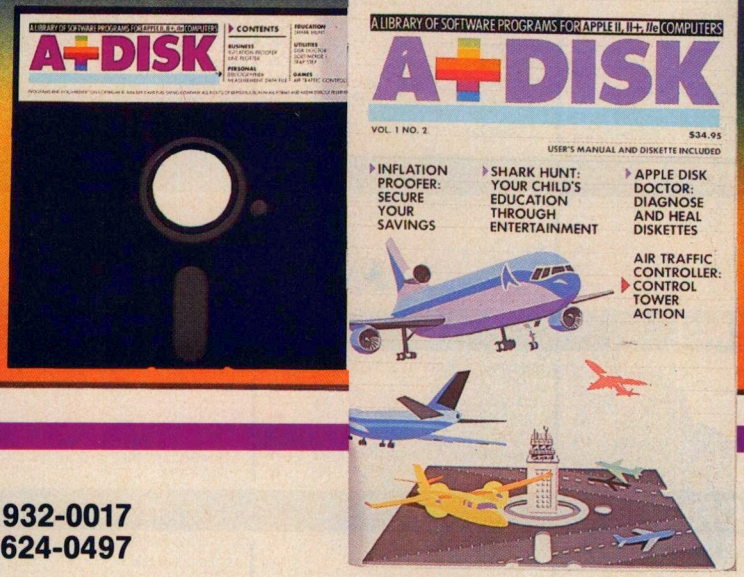

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CIRCLE 115 ON READER SERVICE CARD

filtering such as greater than, less than, equal to, not equal to, and so on. You can also compound information into formulas to calculate criteria.

The result of the filtering is a list of investment possibilities that meet or exceed your criteria. You can save the list and run it through the report generator, turn it into a portfolio, or add it to an existing portfolio.

The program shows you the number of securities that meet each criterion. You get a gut feeling about whether you are being too soft or harsh in choosing investments that make the cut. If you find that you have been unreasonable, you can adjust the criteria.

If a company that you follow is not included in the database, you can add it and other update information by using any combination of the Dow Jones News/Retrieval service, research reports, and the financial pages of your local newspaper.

Entering, editing, and updating this volume of information (more than 7500 items) could be a horrendous task, but the filtering program makes the job more manageable.

Portfolio Pictures

A picture of your portfolio is worth 1000 reports. You can plot any of the information stored on your portfolio as a bar chart or scattergram. You use bar charts to look at different statistics or different investments as a percentage of the total portfolio; scattergrams compare two pieces of information to each other.

The graphics this plotting program produces are not high resolution, but they do get the point across. For quick-and-dirty visual analysis, they are just right.

The charts appear on the Apple's display, or you can print them with any standard printer—nothing fancy, just functional.

The Dream Machine

Micro PMS's Portfolio Enhancer translates your investment fantasies into reality. Simply stated, it is a goal-setting device. Portfolio Enhancer compares any one of your portfolios to a set of "optimum" characteristics for income, growth, or outright aggressive investing. The program's authors determined these characteristics. If you disagree with them and have an adventurous nature, you can use a text editor to change the characteristics. One hitch, though: You have to call Boston to get instructions.

When you put your portfolio through the Enhancer, you get a set of

buy/sell recommendations. In order to gauge the effects of following the program's advice, you can do "what ifs" without actually changing your portfolio—a good idea, unless you enjoy losing money (strictly for tax purposes, of course).

Analyst Extraordinaire

The analysis module's Report Generator is especially impressive. You can incorporate any piece of information in the 1500-item company database into a report. The only limitation is the number of characters on your Apple's display or that your printer can print. To stop you from using too much information, the program tallies how much space you have used, so you know when the report is full.

Not only can Report Generator print out the information in the database, but it can also sum and average, or weight and then average, all of the financial information. That's right, a real report writer. If you're going a little crazy from trying to collate, track, and analyze your investments, then Report Generator will help you keep what little sanity you have left.

High-Performance Graphics

The Performance Graphics program produces x,y charts from portfolio information, where the horizontal axis represents time and the vertical axis represents value. With Performance Graphics, you can plot the performance of one investment or a market index (Dow Jones Industrials, S&P 500, or two other indexes of your choice); compare two investments; index two investments to 100 and then compare them; or compute the relative value of two investments to each other.

The graphics have higher resolution than do the bar charts and scattergrams, but it's still not the best. They do get their point across, though.

You can print out the graphics through any interface/printer combination that prints binary files. No printer drivers come with the software, however.

The Spreadsheet Connection

Report Generator can create a Data Interchange File (DIF) that you can use with any number of spreadsheets.

With Micro PMS's data and your spreadsheet, you can not only design your own analyses, but you can also combine your portfolios with the rest of your finances and get "the big picture."

The Accomplished Program

From the ability of the system to break out gain-and-loss information for taxes, to the design of the reports, the authors have shown that they are in touch with the real world of investments.

On the computer side, Micro PMS has some flaws, the biggest of which is Micro PMS's temper—it loses it every so often. The damage is usually minimal, but the program could handle certain errors better.

Still, each module carries an appropriate price for what it does; and, for what it does, each is an excellent investment. Micro PMS from the Boston Company: a good weapon to have in the battle of the buck. +

PRODUCT INFORMATION

Micro PMS
The Boston Company
One Boston Place
Boston, MA 02106
(800) 468-8324

Requires: Apple II Plus, IIe, or III; two disk drives; Videx card; Hayes Micromodem II

List Price: Portfolio Accounting I, $95; monthly updates of Stock and Data Screening, $395 yearly; quarterly updates, $250 yearly; Dow Jones News/Retrieval, $25

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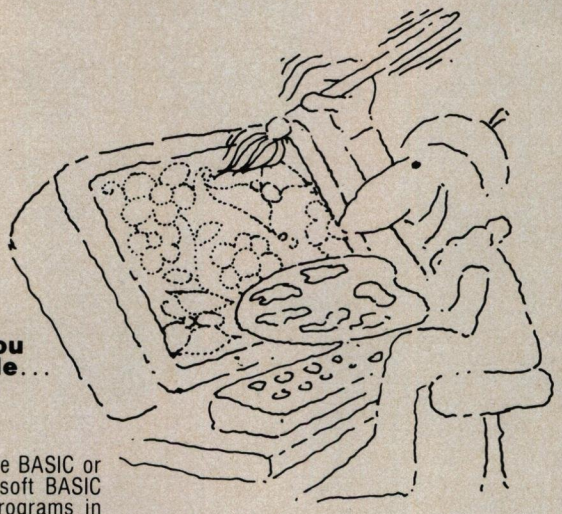

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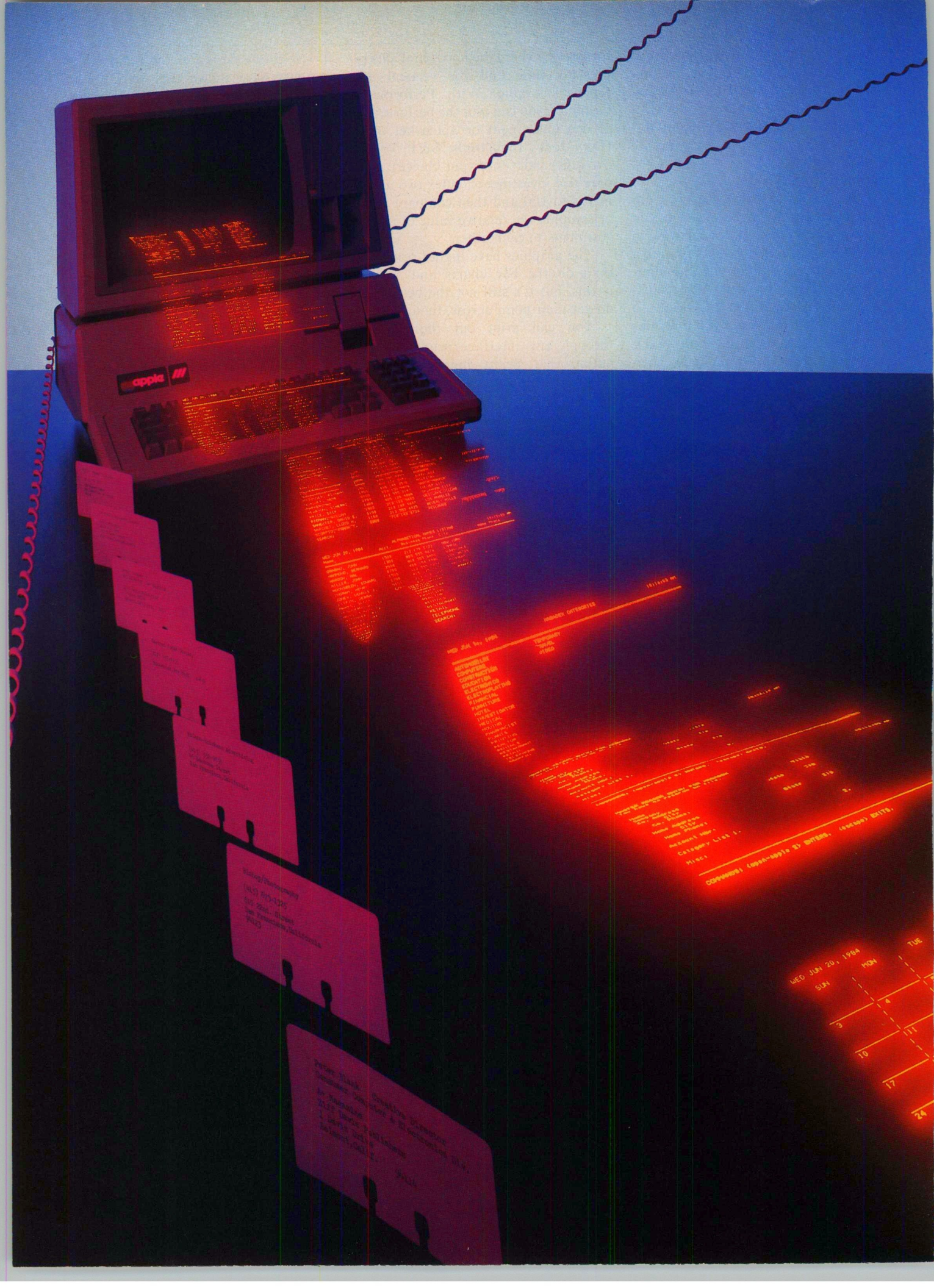
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HABADEX

Before we go any further, let me explain my system for organizing phone numbers and business cards. No, don't stop reading yet—just bear with me.

I have seven stacks of "important business papers" nudged into (usually) neat piles around my office, some near my computer, some not. I have a Rolodex near the telephone and two address books, one of which I tote with me on my travels, the other remaining at home like patient Griselda in case I lose my briefcase. Occasionally I transfer the accumulated new addresses and/or phone numbers from the spiral-bound message pad beside my answering machine to one or both address books.

Business cards have a separate stack, most of the time. Cards may or may not be attached to the appropriate files in my filing cabinet; other than that, they have no categories, since I have no business-card file, alphabetical or otherwise.

It's a nice, tall stack, though, and it makes me feel important when I unearth the card of a software company vice-president next to the calling card of a daytime-TV director and the card of a manufacturing CEO. How the mighty are jumbled. It may take me a spot of time to find those cards, but find them I do. Usually.

In practice, my "system" provides me with minutes, or even hours, of side-splitting hilarity and concomitant ulcers. Many's the time I've rummaged through eight stacks of goodies and a pile of business cards to locate the name of a public-relations officer who can whisper the lowdown on a two-page press release, for which I've also had to search under several different categories.

We will not discuss the difficulties inherent in billing for telephone calls when some of the calls are billable and some are not, and when you have to juggle monthly multipage phone bills from several sources and tot them up painstakingly. My calendar and I have been introduced, certainly, but we're not the best of friends.

A new call-accounting system called Habadex could revamp your telephone-number locating, calling, and accounting methods.

Chances are good that you yourself, a coworker, an employee, or a friend share some of these problems with calendars, categories, and calls.

Imagine my interest when I was introduced to a new call-accounting system called Habadex, which claims that it can revamp your telephone-number locating, calling, and accounting methods. (It works with all the Apples except the Lisa—I'll focus on the Apple III version here.) Not only that, the product's manufacturer, Haba Systems, says, but it can also provide a handy source of names for mailing lists, an electronic calendar that alerts you to your appointments, and a program that links frequently used programs together for easy access.

System Components

The complete Habadex system includes the Habadex software and a Habaphone plug-in-interface phone card. Using both the software and the card, you can locate the desired file, retrieve a phone number from it, "dial" the number with a single keystroke, and automatically add Other Common Carrier (OCC) numbers for Sprint, MCI, Metrophone, or your other access codes. Without the phone card, you won't be able to auto-dial or keep records of your phone calls.

Habadex's call accounting keeps track of all calls placed from your phone or extension. The program calculates, stores, and bills the costs of any calls to your phone account. If you levy a surcharge on calls as part of your dai-

DAVID BISHOP

ly business, the program figures that into the final charge for the call. Built-in costing tables for phone rates reduce end-of-the-month calculations for your accounting department.

You can store up to 6000 names, addresses, phone numbers, or other reference information. More than a business-card filing system, this part of Habadex is akin to a politician's Rolodex or "Farley file," in which you may want to record not only a person's address, but also a reminder that you met him or her at an office-automation conference, or that her favorite flowers are freesias.

Another feature of Habadex is its report-generation package, capable of printing mailing lists, multiple memos, letters, and labels. Any word-processing, spreadsheet, or other ASCII-generating program can accept information from your Habadex files and merge it into, for instance, the body of a report.

Perhaps you're tired of flipping through the pages of your "Month at a Glance" to jog your memory about where you should be today. A calendar, clock, and appointment-book package lets you review your monthly or daily schedules with a couple of keystrokes, and alerts you with an attention-getting beep when it's time for an important meeting.

A calendar, clock, and appointment-book package lets you review your monthly or daily schedules with a couple of keystrokes.

One extremely important part of the system is called Habanet, or Haba Memory Manager, depending on whether the system is running on a ProFile hard disk or on diskettes. Either way the program lets you load multiple programs and change applications without rebooting. In the complete Habadex system, Habadex is merely the first program on a Habanet menu that can accommodate up to 24 programs.

The system works best if you have a hard disk—without one you'll lose the benefit of Habanet's quick switching from program to program. Instead, you'll be reduced to plugging in diskettes if you want to bounce back and forth among more than three or four programs.

Who Uses Habadex?

Chaz Haba, president of Haba Systems, says Habadex and the company's other products are among the first to use an advanced telephone-management system for microcomputers as part of their databases.

The company's vice-president of finance, Doug Redding, says that Habadex's chief users are salespeople and other professionals who spend a lot of time on the phone. For salespeople, says Redding, "it dials the phone and tells you whom you're talking to, and you can type in information on what you're discussing, save it, and go on to the next record."

Lawyers, accountants, consultants, writers, and frequent telephone users who want to bill clients for their time and trips to the touch-tone need no longer puzzle through sheaves of bills either.

Plugging It In

Far from being difficult to install, Habadex is ridiculously easy to plug into your Apple.

After turning your computer off, remove the top cover to reveal the empty expansion slots and install the Habaphone card in slot 3. Ease the phone card into the connector located on the circuit board. Connect your hard disk, if you haven't already done so, with a hard-disk-interface card (not provided by Haba Systems). Unplug your modular phone from the wall, plug it into the top jack of the Habaphone card, and run a standard phone cord from the wall jack to the bottom Habaphone jack. Tough, eh?

The program takes up 32K of RAM, no problem with a hard disk and still manageable without one. If you have a modem, you can do without the phone card; in that case, make sure you have the Apple III clock chip, or the clock and calendar won't function.

Once you've installed and booted the system, you can begin entering names into your database.

Individual records have fields for the usual name, address, phone number, home address, and business title. They also include two fields for "categories," subheadings you can search through if you can't remember a salesperson's name but know he worked for a particular type of company.

The program lists records alphabetically, in the last name-comma-first name format, and also by category. The program doesn't overlook errors in capitalization, so be consistent in data entry, or you won't be able to find names when you need them. Don't get too fancy with the category listings. "Garden" and "gardener" may mean the same thing to you, but to Habadex they're two distinct categories. An unwary user could end up with a tangled proliferation of categories.

At the bottom of each record is a "miscellaneous" space—here's where you list the inside dope that can help you make the sale the next time you call.

Redding ran the Habadex system through its paces when I visited Haba Systems offices. After entering my name, telephone number, and category, we auto-dialed my home in Northern California, which took little time, since I wasn't home. Habadex reported that the cost of the 48-second call to my answering machine from the San Fernando Valley to the Bay Area was 62 cents via Metrofone.

"That information has been saved on disk," he said, "and I can call that information back on a report at any time."

Call reports list the date, time of call, duration in minutes, the number dialed, the cost of the call, and the surcharge for the call—this last field is designed for professionals such as attorneys who bill clients not only for the calls but also for the cost of their time. For instance, Habadex permits you to tack on a surcharge of $1 for the first minute of a call and 50¢ for each additional minute.

"Dialing" a number requires nothing more than pushing the Return or Enter key when the cursor is positioned over the appropriate telephone number in the name or category listing. The alphabetic name display shows the names, account numbers, business phones, cities, and home phones of everyone on file. One handy Habadex trick is to let you bill a client's account directly, instead of languishing until the end of the month, by simply waiting till the call has begun and them moving to the account number and typing B.

Habadex can save you money on your long-distance calls through sheer convenience, Redding notes. Placing a long-distance call with an OCC Sprint takes 15 to 20 seconds, since you have

to dial 13 extra digits on top of your original 10, and that's assuming that you don't make a mistake anywhere in those 23 digits. With Habadex, however, you have to press only one key correctly, and the program does the rest.

This menu-driven system doesn't force you to memorize scores of double- or triple-keystroke commands. Approximately 15 commands, most of them single-stroke, suffice to operate the keyboard, along with a few more to set up parameters for printing reports: Z to zoom in on the individual record from a name listing, D to direct-dial instead of auto-dial, Control-P to print the contents of the screen.

Habadex works closely with Apple, both in developing software and providing the company with products for in-house use.

Once you've made your calls for the day, you can check on your day's appointments in the calendar—or you can do it the other way around, if you prefer. When you move from the Habadex main menu to the calendar, the cursor moves immediately to the first day of the month. Zoom in on the requisite day; enter your meeting name and time; and on the stroke of the designated hour, Habadex reminds you of your engagement. The calendar reaches as far forward as 1999 and as far back as 1900. You can't save the screens, though—each screen is computed by an algorithm, so the screen itself doesn't take up much space. The program saves only the data on the calendar.

Ideally, with the Habadex/Habatel system, experienced users can make a series of telephone calls, update their records within the individual listings, and produce a report of the day's activities within seconds. The programs linked together by Habatel can take the proper date, time, and names from the Habadex files and complete an office memo. Habadex can feed information to any program that accepts ASCII files.

Documentation

Habadex comes with a terse booklet of approximately 60 pages; the documentation has spaces for notes, a quick-reference command listing in the back, and a schematic for tinkerers.

Habadex's documentation doesn't exactly stand on ceremony, as readers will discover upon encountering one help section entitled "Uh-Oh," or noticing that with the help screen "you should be able to extricate yourself from any difficulty. Knock on wood." Any resemblance to documentation from Apple Computer, Inc., is intentional—Habadex works closely with Apple, both in developing software and providing the company with products for in-house use.

Other Habadex Versions

Haba Systems is one of the companies Apple has "seeded" with the Macintosh technology. Haba Systems' first contribution to Mac software is a version of Habadex designed specifically for the Macintosh.

The original Habadex approached the visual look of its tables of names in prosaic, line-graphic manner. This new version takes the pictorial view common to the Lisa and the Mac, the icon orientation.

For instance, the listings of names and telephone numbers don't appear in a blocky vertical list, but rather in a representation of a personal address book with tabs from A to Z. You move the cursor with the mouse to the desired letter of the alphabet. When the proper "page" flicks open on the screen, you can click the mouse's button to expand a particular record. You can reshuffle the information on the lists in eight different sorts.

"In terms of what the program does, it's conceptually the same" as the original, says Redding, "but the whole user interface is different. It's very Macish."

The Macintosh version of Habadex sells for $199.95 retail, a considerable drop from the $295 price of the III version. The demands of the marketplace dictated the pricing decision, Redding says. "Microsoft has set the level for pricing for the Mac—we didn't want to buck the trend. I haven't seen anything much higher than $195 announced for the Mac."

The recently introduced Apple II version of Habadex works with all the computers in the II series. A mouse will be available for this version in the near future. The Apple II and III version are similar, with only slight differences in some of the commands.

Power and Simplicity

This superficially simple system actually wields a lot of power. Salespeople and other professionals aren't the only market. Schools can use Habadex for their student records—for immediate recall of a student's emergency telephone number, for example, or for the student's or faculty member's class schedule.

The Manpower temporary agency had Haba Systems custom-design a version of the program, called Manpowerex, which records applicants' experience, education, and employment history, the better to match employer and temporary employee.

Larger companies that aren't particularly interested in the personal-productivity enhancements of Habadex but are still anxious to keep phone costs down can look into another product called Habatel. This product is an accounting computer that logs all calls going out of a company and prints results regularly, so that managers and employees can locate the source of costly calls. Habadex is oriented toward single workstations and lone workers, whereas Habatel will appeal to businesses that are trying to manage a large volume of telephone communication.

Although Habadex isn't the computerist's answer to interminable telephone gab sessions, it is a tool that many professionals will appreciate. Until I get one for myself, have you seen that software company's press kit? I knew it was around here someplace . . . . +

PRODUCT INFORMATION

Habadex
Haba Systems, Inc.
15154 Stagg Street
Van Nuys, CA 94105
(213) 901-8828

List Price: $595, Habadex with Habaphone; $295, without Habaphone; $395, Habaphone card separately; $95, Haba Memory Manager for III; $199.95, Habadex for the Macintosh; $50, Haba Interface Box

Requires: 128K Apple II or II Plus with 80-column card, IIe, IIc, 256K Apple III, or Macintosh; two disk drives (hard disk strongly recommended); ProFile for II version; touch-tone modular telephone; modem, phone card, or Haba Interface Box; printer recommended

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Then there's ***Crystal Castles***™ where Bentley Bear™ journeys through all sorts of tantalizingly difficult paths and ramps in his endless quest for gems.

In ***Donkey Kong Jr.***[2] by Nintendo[2], Junior tries to rescue his father against immense odds. And speaking of Donkey Kong, there's also ***Mario Brothers***[2] by Nintendo[2]. This time, Mario and his brother Luigi battle creatures on four levels of floors, encountering all sorts of treacherous enemies.

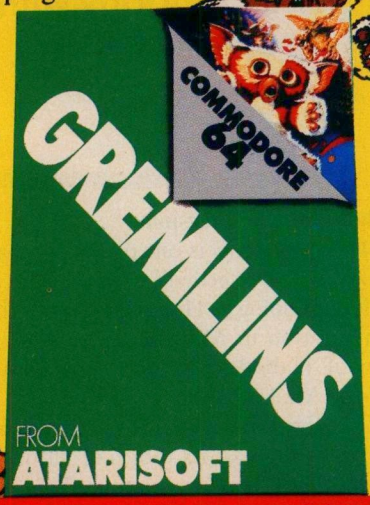
In ***Track And Field***[3] you can compete by yourself or head-to-head with another player. But each player must beat qualifying times, heights and distances before they can compete in each of the gruelling six events.

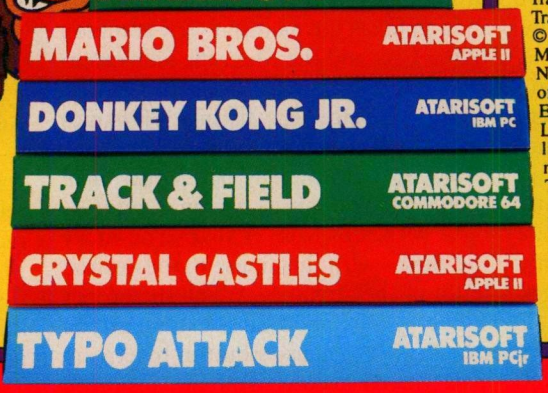
Typo Attack is the much-acclaimed, fun-filled program that allows you to enjoy developing your typing skills at any level.

And still playing to the delight of audiences everywhere are ***Pac-Man***[4]; ***Ms. Pac-Man***[4]; ***Jungle Hunt***[5]; ***Battlezone***™; ***Donkey Kong***[2] by Nintendo[2]; ***Centipede***™ and ***Pole Position***[6].

So, if you've been searching for ways to entertain your Commodore, Apple or IBM, treat it to one of the best shows in town, one of the hits from ATARISOFT.

And don't forget the popcorn.





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*Titles available on IBM PC jr. are Ms. Pac-Man, Centipede, Donkey Kong, Moon Patrol[7] and Typo Attack. Available on the VIC 20 is Typo Attack.

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ATARISOFT

SIX NEW HITS ARE COMING SOON TO AN APPLE II SCREEN NEAR YOU.

CIRCLE 102 ON READER SERVICE CARD

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A+ THAT'S

ENTERTAINMENT

GAME REVIEWS

THE REVENGE OF THE ENCHANTRESS: ULTIMA II

Sierra On-Line, Inc.
Sierra On-Line Building
Coarsegold, CA 93614
(209) 683-6858
List Price: $59.95
Requires: Apple II, II Plus, or IIe; 48K RAM; one disk drive

CIRCLE 701 ON READER SERVICE CARD

Question: What do you get when you cross your Apple computer with a fantasy adventure game, the movie *Time Bandits*, arcade action, and graphics wizardry?

Answer: The Revenge of the Enchantress: Ultima II.

Ultima II, an outstanding arcade adventure game, whisks you through time and space on a magical, mystical quest. Not only do you scour the Earth searching for clues, recovering ancient artifacts, and slaying evil monsters, but you also rocket to other planets in the solar system, including those not yet discovered. If that isn't enough, you travel through time itself via time doors—gateways connecting Earth's past, present, and future—if you can catch them.

Ultima II is a sequel to Ultima I, but you do not need Ultima I in order to play Ultima II.

Ultima I's villain was a powerful sorcerer named Mondain. Presumably, if you have finished Ultima I, you've already vanquished him. In Ultima II, Mondain's apprentice, Minax, the "enchantress of evil," takes Mondain's place. She's so vile she makes Mondain look like a Boy Scout. Your mission is twofold—discover what will eliminate Minax, and then proceed to do so.

As all role-playing games do, Ultima II requires you to create a character—a computerized alter ego—to adventure across Earth, space, and time. You have 90 points to distribute among your character's six attributes, which are strength, agility, stamina, charisma, wisdom, and intelligence. The higher the point total, the better the attribute.

Next, you choose one of four races—human, elven, dwarven, or hobbit; one of four professions—fighter, cleric, wizard, or thief; and one of two genders—male or female. Each race, profession, and gender adds points to a particular attribute. For example, selecting elven increases your agility five points, wizard adds ten points to intelligence, and male boosts strength by five points.

You can add points to your attributes, up to 99 points apiece, during the adventure. You must discover how to do so, however, and the points are costly.

Your character starts with 400 hit points, 400 food points, and 400 gold pieces. The hit points, which indicate how much physical damage you can take, decrease quickly during battle, especially if you are not wearing armor. The food points gradually dwindle as you explore. The gold pieces allow you to purchase weapons, armor, information, and other items—if you can find a place that sells them.

You then begin your quest in earnest by being dropped somewhere on Earth—usually in the middle of a hostile wilderness with no friendly village in sight. Your first order of business is to find a village and buy some weapons

and armor, and then you can start exploring and have a reasonable chance to survive.

Ultima II contains truly impressive graphics with seven colorful types of terrain. The deep-blue ocean rolls between the coasts. Blue-and-green swamps mingle with dark-green forests, and purple mountains tower majestically over plains of green spotted grass. White walls flank the purple cobblestone streets in the villages and inside the castles.

That's just the surface. When you enter dungeons and towers, you see corridors and rooms displayed in three-dimensional perspective. Since you face only in one direction, long corridors fade into the distance, and you cannot see around corners.

Evil monsters populate the countryside, and they swarm around you like piranhas after fresh meat.

The monsters, creatures, and men on the surface are small, slightly fleshed-out white stick figures. Despite their diminutive size, you can easily tell the difference between an orc, a thief, a daemon, a jester, and anything else.

The monsters in the towers and dungeons are another story. They're colored green—perhaps with envy of the aesthetic quality their surface counterparts possess. These monsters are much larger than their surface cousins and are sculpted with block graphics more reminiscent of a TRS-80 than an Apple.

The game also contains good sound effects. About the only thing missing is a speech synthesizer. As you explore, you hear the click of your heels echoing off the ground. During battle, you can hear the swish of a miss or the crunch of a hit. A high-pitched whine signals your entry and teleportation through one of the blue time doors.

The movement controls permit rapid responses, and they are very simple to use. As in an adventure game, you travel in the four compass directions. Ultima II is a real-time arcade adventure game, however, so instead of typing in a direction, you press the Return key, the / (slash) key, the right-arrow key, or the left-arrow key to move north, south, east, or west respectively.

Into Battle

Only evil monsters populate the countryside, and they swarm around you like piranhas after fresh meat. If you're clever, you'll put your back to something impassable such as a wall or a mountain. Some monsters are easier to kill than others—for example, a daemon is pretty tough, but an orc is "more pest than peril." To attack, you press the letter *A* and then a direction key.

Pressing two keys in sequence during a real-time battle can be tricky. Sometimes you accidentally reverse the order, pressing the direction key first, followed by the *A*. This sequence causes you to try to move through the monster, which you can't do, and you end up losing your turn. Even the manual notes that "the timing will come."

Ultima II contains 26 letter commands ranging from *A*, for attack, to *Z*, for character status. Some of the more interesting commands include *C*, for cast one of nine magic spells; *H*, for engage the rocket's hyperspace drive; *S*, for steal item from a store; and *Y*, for yell something nasty to release your frustrations.

An 18-page illustrated booklet, skillfully crafted to look like old parchment, provides instructions to start you on your quest. The documentation contains a one-page story on the rise of Minax, but pitifully few hints on how to depose her. After all, the manual says, "Your purpose is to learn how to fulfill your quest and then do what is required."

That's a pretty tall order, though, especially when you can roam all over the globe, enter dungeons and towers, rocket around the solar system, and pass through time doors to five distinct periods of Earth's past, present, and future.

Even worse, all those time doors are not fully mapped. You receive an artistic, 16 × 22-inch cloth map of Earth with interconnecting time corridors printed on it. Unfortunately, the map is not all that accurate. You can get real lost real fast trying to navigate the corridors, but that adds to the fun of exploring the game.

Ultima II has many plot twists that mix technology and magic across time and space. With each accomplishment, you receive experience points. The more experience points you accumulate, the more powerful you become. In general, the tougher the battle, the greater the points. Thus, you receive more experience points for defeating a devil than you do when you get a lowly orc.

Whenever your character dies, and that will happen all too frequently during the first few times you play Ultima II, the program will "reincarnate" your character with all attributes, gold, and belongings. The character will be reborn right where you were the last time you saved the game.

You can roam all over the globe, enter dungeons and towers, rocket around the solar system, and pass through time doors to five distinct periods of Earth.

If you play Ultima II once, you'll be hooked for a long time. The game boasts more than 300K of machine-language programming spread over three disk sides. You are not going to solve the puzzles, recover the artifacts, and finish the quest in one afternoon. Prepare to receive your money's worth from this program. The Revenge of the Enchantress: Ultima II places you in the middle of a maelstrom in Lord British's fantasy realm. It captures your imagination as you battle across time and space in a fast, fun, and exciting quest against evil. Ultima II is the ultimate arcade adventure game.

Russ Lockwood

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A+ THAT'S ENTERTAINMENT

EXODUS: ULTIMA III

Origin Systems, Inc.
1545 Osgood Street, Suite 7
North Andover, MA 01845
(617) 681-0609
List Price: $59.95
Requires: Apple II, II Plus, or IIe; 48K RAM; one disk drive

CIRCLE 702 ON READER SERVICE CARD

Once again, Lord British calls for all true heroes to undertake a perilous quest to rid his realm of an oppressive evil. No one knows who or what is plaguing the good land of Sosaria. The only clue is the word *exodus* written in blood on the deck of an abandoned ship.

Exodus: Ultima III, a captivating multiplayer arcade adventure game by the Lord British programming team, is the most sophisticated game of the Ultima series. It picks up the story line begun in Ultima I and Ultima II and sends you on another mysterious quest. You do not need Ultima I or Ultima II to play Ultima III.

The object of Ultima III is to find out where the great evil resides, discover how to exterminate it, and then do so. In Ultima I and II, a single hero could destroy the evil sorcerer Mondain and the enchantress Minax. In Ultima III, one hero is not enough.

Ultima III warns "bare is the back who hast not kin to protect it" and allows up to four adventurers to play at once. Each player creates and manipulates one character—a computerized alter ego—to find clues and fight battles across the width and breadth of the land. The program can hold up to 20 characters on disk.

To create a character, you choose a name up to 13 letters long; pick a sex—male, female, or other; and pick one of the five races—human, elf, dwarf, hobbit, or fuzzy. You then pick a profession from the 11 choices—fighter, cleric, wizard, thief, paladin, barbarian, lark, illusionist, druid, alchemist, or ranger.

Finally, you divide 50 points among four attributes—strength, dexterity, intelligence, and wisdom. As in Ultima II, the higher the point total, the better the attribute. During this adventure, too, you will be able to add points to attributes. You must be very shrewd in picking a race and a profession and in assigning points to your attributes. Each race contains limitations on attribute-point totals, and these points affect a character's profession. Essentially, this means certain races are better suited for certain professions.

For example, a fuzzy, which looks and acts like an ewok from *Star Wars*, does not make an effective fighter. Its strength—a prime requisite for a fighter—can only increase to 25. A fuzzy would make a good wizard, however. Its intelligence, which controls magic spells, can increase to 99.

Each character's equipment includes food; gold pieces to buy weapons, armor, information, and other items; and hit points that determine how much damage a character can take before it dies.

The party of four characters, represented by an elaborate stick figure, wanders the face of Sosaria in search of clues and treasure. Ultima III's graphics, like those in Ultima II, include rolling blue oceans, spotted green grasses, blue-and-green swamps, green forests, and majestic purple mountains. Unlike Ultima II, with Ultima III you can see only part of the surrounding countryside on your screen. Adventuring can become pretty intimidating and frustrating when only a small "window" of the land is visible.

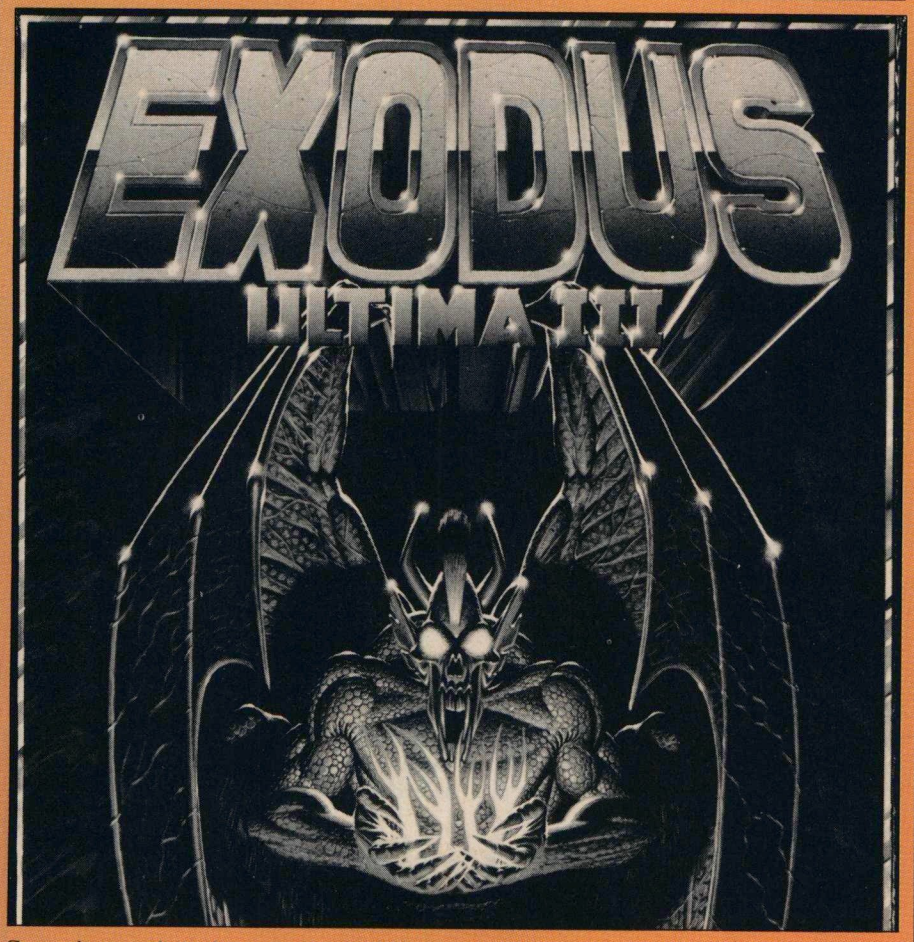
When you explore deep dungeons or high towers, spectacular three-dimensional graphics greet your eyes. Long corridors fade into the distance, and you do not know what lurks inside rooms

The only clue is the word *exodus* written in blood on the deck of an abandoned ship.

until you actually open the door.

Like Ultima II, Ultima III lets you enter the purple cobblestoned streets of towns and castles. Again, you see only part of the town at one time.

The big improvement in graphics occurs during battle. In Ultima II, one character fights against one monster.



Sometimes, when the monster decides to retreat, you have to chase it hundreds of miles to strike it down. In Ultima III, the real-time battles take on a new look and feel with four players.

When characters and monsters clash, the program magnifies the area and turns the screen into a tactical arena. The four characters appear on the bottom of the screen with a group of monsters at the top. Players control their characters individually during combat. Only one side may emerge victorious after battle.

As the monsters charge, characters fire arrows and cast spells from long range. As the monsters close in, players maneuver their characters for hand-to-hand combat. Swift sword strokes eventually vanquish one side, but not before numerous orange auras flare around those who have been hit.

The controls governing movement are the same as in Ultima II. Pressing the Return key, / (slash), right-arrow, and left-arrow keys moves the party north, south, east, and west respectively. Again, Ultima III contains letter commands ranging from *A*, for attack foe with weapon, to *Z*, for a status report on a character.

The game's only drawback is crowding four people around an Apple. You can have more of a battle reaching the keyboard than on the screen. Since Ultima III features real-time play, slowpokes could end up losing their turn. A better arrangement might be to have one player act as a master typist to enter all the commands.

Documentation

The 20-page "book of play" provides an adequate set of instructions. Since much of Ultima III is based on your ability to discover various facets of the game, the instructions provide few tips on actual play strategy. The well-illustrated digest contains numerous illus-

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trations of towns, shops, citizens, and monsters.

Ultima III includes a 13 × 21-inch cloth map of Sosaria with pitifully few details. It teases you with various locations to visit, such as the City of Yew, Castle of Lord British, and City of Fawn, but not a spot on the map tells you where they are.

The map also fails to mark the location of the mysterious moon gates, which Ultima II called time doors. The moon gates, which provide instantaneous travel through Sosaria, appear and disappear with the phases of the twin moons, Trammel and Felucca. The map shows the phases but not the gates.

Spell Casting

Ultima III lets you cast 16 cleric and 16 wizard spells, far more than Ultima II's 9 spells. *The Book of Amber* lists the wizard spells, and *The Ancient Liturgy of Truth* contains the cleric spells. Each 20-page booklet contains a spell description as well as an imaginative ritual for casting.

For example, the "Lorum" spell reads: "Before entering any dungeon, cave, or even any houses, with unsteady lanterns, be sure that thou hast prepared a goodly supply of Lorum dust. This is easily done by collecting the fine dust from a spider's bath, which has been warmed by a strong sun for many hours.

"Gather the dust into a chamois bag and seal the sun's energy within it by singing these words: Obrey Uricum Obla Sum. To release the energy, chant these same words in reverse order, and cast a small portion of dust into the air. A warm, soft, magical light of short duration will be produced."

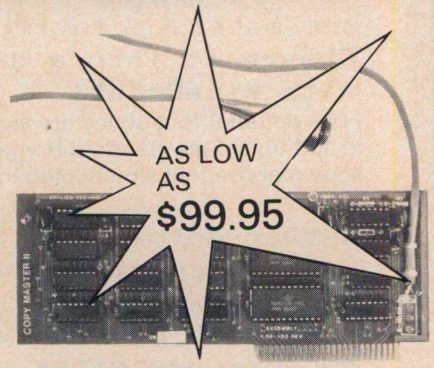
In actual game play, you just press *C*, for *cast magic spell Lorum*. These types of embellishments, present throughout Ultima III, add to the flavor of the game.

Ultima III borrows heavily from the popular fantasy role-playing game Dungeons and Dragons which also features group play, sword and sorcery action, and a quest for triumph over evil. As in Dungeons and Dragons, players compete against the situation, not against each other.

Ultima III is a tough game as well as an extensive adventure. It is so challenging that Origin Systems offers a players' guide, called *Secrets of Sosaria*, that details the land, magic realms, clues, and dungeons.

Ultima III is an excellent sequel to Ultima II, which is already an impressive sequel to Ultima I. The imagination, riddles, arcade action, superb graphics, and fine details make Ultima III a challenging and enjoyable game. In the realm of computer adventure games, Lord British deserves to be crowned king.

Russ Lockwood



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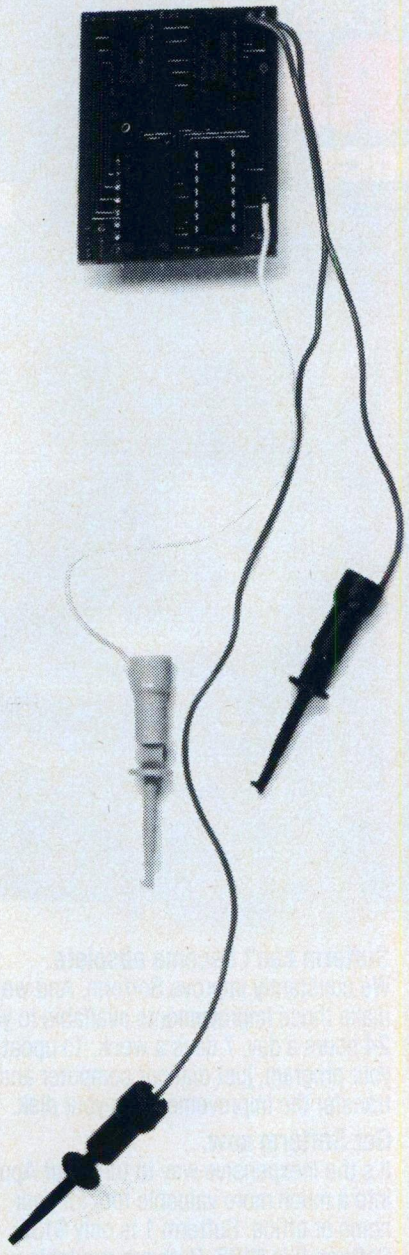

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A+ THAT'S ENTERTAINMENT

PRODUCT NEWS

Nine games from Reader's Digest
Young children can learn numbers and the alphabet while playing Alphabet Beasts & Co. When a child presses a letter or number key, the screen displays a colorful picture of a fantasy beast or magic dragon that represents the number or letter. The program also features a cartoon bonus that allows children to create their own pictures.

Two programs in the Little People's Puzzles series designed for preschoolers feature colorful picture puzzles. Nursery Rhymes comprises eight different nursery rhymes and Things That Go features several modes of transport. Children select a puzzle from one to four levels of difficulty and try to assemble it. Both programs include an option that enables adults to create new pictures.

Micro Habitats is designed for children ages 6 to 12. Children decide what kind of plant and animal life should populate a variety of habitats.

Puzzle Mania, for ages 7 to adult, offers seven different jigsaw puzzles, and you can pick from six levels of difficulty for each puzzle. You can also paint pictures to create your own puzzles.

Designed for ages 7 to 17, Speedy Spides is an arcade-type game that helps you remember facts. The program contains nine fact files that cover arithmetic and grammar skills and also provides the opportunity for your to create your own files.

Players move "spides" to boxes that contain correct answers to questions displayed on the screen.

Three games that provide practice in word definition and vocabulary are Trickster Coyote, Key Lingo, and Chambers of Vocab. All three programs contain 300 words, offer three levels of difficulty and include a customization feature that enables you to add your own words to the games.

Last, Cogito is a game of strategy for all ages. Two players move across an ever-changing grid and bid against one another to accumulate money and land. *(List Price: Alphabet Beasts & Co. and Speedy Spides, $34.95; all others, $39.95)*

Requires: Apple II, II Plus, or IIe; 48K RAM; one disk drive; color monitor; joystick (Cogito only)
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Pleasantville, NY 10570
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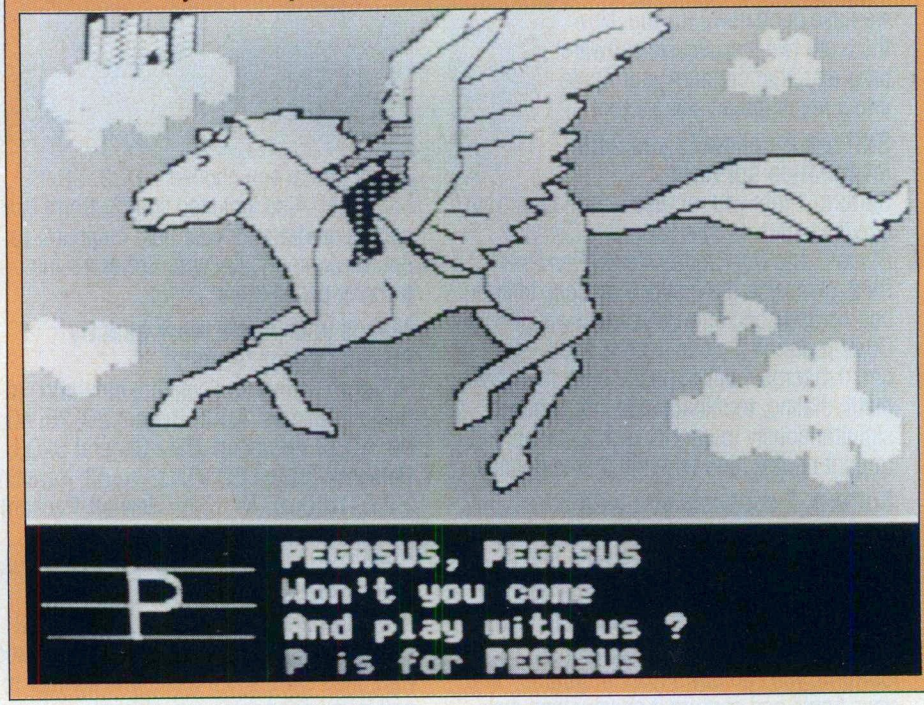

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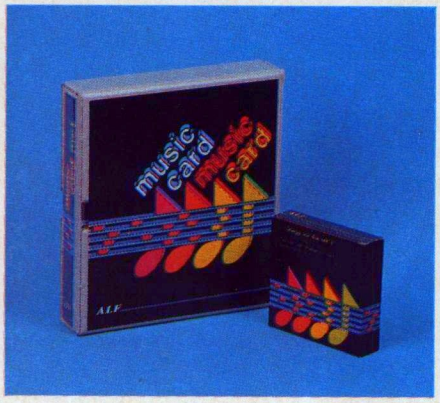

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▶ GRAPHICS/BY ROBERTA SCHWARTZ

SHAPING UP

PART II OF A REVIEW OF FIVE SHAPE-UTILITY PROGRAMS

The first part of this article, which appeared in last month's A+, introduced the concept of shape tables. It also reviewed two software packages, AccuShapes and Apple Mechanic, for creating shapes and shape tables. In this second and final installment, you'll find a review of Higher Graphics II, Pixit, and Shapes in Color, as well as general hints for using shape tables.

HIGHER GRAPHICS II

At one time Higher Graphics II was the only program that provided full shape-table editing for the Apple II series of computers. The Shape Shuffler utility was reason enough to purchase this program.

The 24-page manual is easy to follow, but you will seldom need to refer to it, since every mode in the program is preceded with on-screen instructions. A section of the manual is devoted to high-resolution routines, but these apply only to Integer BASIC. The author refers you to the Applesoft manual for further information.

The demo effectively shows how to use animated shapes and shape fonts. It includes a shape table of 60 shapes, as well as a complete ASCII shape font.

Higher Graphics II is composed of three modules: The Shape Maker, the Shape Shuffler, and the Screen Creator. Pressing the Escape key, in any mode, presents you with a list of options, and pressing the space bar displays the commands, which are mnemonic and easy to remember.

The Shape Maker program creates tables of up to 255 shapes. A count of shapes and bytes used and remaining appears at the bottom of the screen. When you begin, the program asks if you want to start a new shape table or load an old one. If you start a new table, you must enter the number of shapes your table will contain. You cannot change the size of the table after you set it, so you should input a number higher than the number you think you will actually need. Then you get a large cross-hair cursor in the center of a blank screen. You can choose to work with or without the cross hair, but you must start your shape in the center. You use D, U, L, and R to plot your shapes.

You can toggle your plotting on and off. The cursor is one step behind your directions, so when you press D, U, L you will not see the downward move until you input the upward move, you will not see the upward move until you input the move to the left, and so on. This delay is disconcerting at first, but you can learn to compensate. The program lacks a background grid, and the cross-hair cursor is difficult to line up, so you can easily lose your place if you look away from the screen.

Only Higher Graphics II, of all the programs we're looking at here, allows you to design your shape in any scale, rotation, or color. You can change these options at any point during the shape's creation, so you see the shape exactly as it will look upon completion. Another excellent feature is Z-shapes, which lets you display any shape in your table anywhere on the screen, at any angle or scale, to use as a reference for your new shape. This is helpful when you are designing a series of shapes with moderate changes for animation. Editing of the shape in this case is limited to removing the last two or three moves you plotted.

When you finish the shape, the program draws and xdraws it. If you are satisfied with it, the shape is compiled and saved to the table, and you can go on to the next one. If you are not satisfied with the shape, you respond N when the program queries you, and it erases the shape. A screen message says Try again, and you end up back at the blank screen. This is the most obvious flaw in the program. You expect to return to the screen with the shape intact so that you can take another stab at editing it, but instead, the shape that you may have been working on for quite some time just disappears.

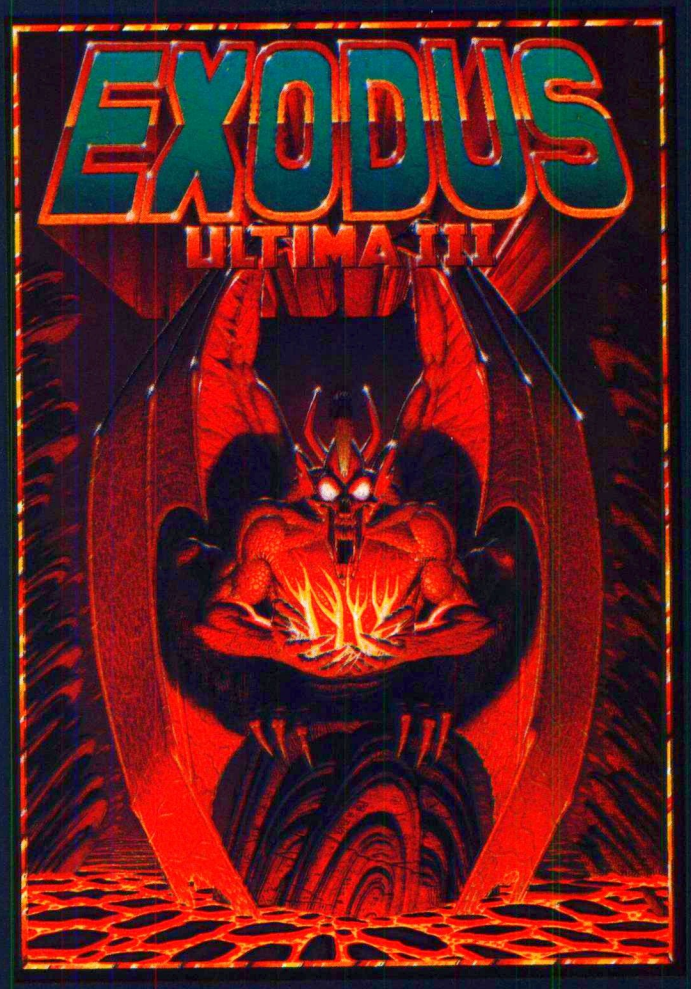
The Shape Shuffler program allows you to load two tables and shift shapes from one to the other. You can display any shape from either table or see all the shapes in a table, 50 at a time, and they may overlap. You can insert a shape from table 1 into table 2, delete a shape, or transfer a shape from table 1 to the end of table 2. A word of caution here: When I deleted the first or the last shape from a table, I ran into trouble. Even though the program showed the new table without the deleted shape, when I used the table in a regular Applesoft program, the "deleted" shape was still there, and the last shape was distorted.

The Screen Creator module lets you design background screens for your shapes. You can draw with lines or dots or you can load a shape table and place any of the shapes on the screen in any color, at any angle or scale. If you load in a shape font, you have the same flexibility. Adding text upside down or vertically is quite easy. You can move your screen up, down, left, or right, and you can load a reference screen onto hi-res page 2.

Z-Shapes lets you display any shape in your table anywhere on the screen, at any angle or scale.

Higher Graphics II is a complete shape-utility program. At one time I would have recommended it without hesitation, but some of the newer shape programs do just about everything this

"A LIVING TAPESTRY . . ."



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"Exodus: Ultima III is Lord British's magnum opus — so far. It's fun and exciting to play and constantly intriguing. And the ending is marvelously unexpected and not a bit disappointing — except that it is the ending, and as with a good book, you'll probably wish there were more." — Softalk

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program does and more.

PIXIT

Pixit is a menu-oriented program that is easy enough for a novice of any age to use.

The documentation, a 38-page manual, is concise and easy to read, with sample screens to aid you in following the tutorial. The manual provides comprehensive instruction on the use of the program, but more information on using shapes and shape tables would have been helpful. The demo is effective, with appealing sample animation. The disk comes with a large selection of shape tables and fonts.

The Shape Creator

When you enter the Shape Creator, the program asks you to choose a drawing scale from 1–7, and the scale you select determines the degree of magnification on the screen. If you choose a magnification of three or greater, you also receive the option of using a grid. Next, you select the beginning plot position, which can be top left, left center, bottom left, or center. You can change any of these choices while you are working on your shape.

The Shape Creator has two sets of cursor-move keys. I, J, K, and M move and plot, and A, W, S, and Z move without plotting. You can backstep with the arrow key to correct errors. You can back up one, two, or five moves, or all the way back to the beginning of your shape. Control keys allow you to move forward or backward through your shape.

When you have completed your shape, simply return to the function menu and choose the option that lets you compile your shape table. After you give it a name, the table is saved to disk. You then decide to create another shape or return to the main menu. This particular utility does not allow you to create complete shape tables; you create one shape, save it, create a shape, save it, and so forth. To assemble the shapes into a shape table, you use the Shape Table editor.

The Shape Creator includes a utility called The Shape Sourceror, which allows you to load any shape table from disk, review the shapes it contains, and select one for editing. The Sourceror uses the same commands as the editor.

Shape Table Editor

The Shape Table Editor is as easy to use as the shape maker. You load a shape table, scan its shapes one at a time, and select as many as you want to go into the new table, up to the maximum of 128 shapes. Your options are on the screen at all times. You can add shapes (to the end of the new table), insert them (between any two shapes already in the new table), or delete them from the new table. You can scan the new table as well as the source table. When you have finished creating your new shape table, it is saved to disk.

The Picture Editor

This program allows you to draw your shapes on the hi-res screen and add lines, circles, color, and text (see figure 1). This flexibility is useful for creating standard hi-res pictures from your shapes, backgrounds for animations, and charts. After loading in a shape table, you can display, move, rotate, scale, draw, or xdraw any of its shapes, in the standard Apple hi-res colors. The color-fill option has 16 colors and patterns.

The Printer Graphics Dump

This utility is extra for those who have an Epson MX-80, FX-80, MX-100, or FX-100 printer with the Graftrax option and a standard parallel interface. You can send your hi-res pictures directly to the printer, without leaving the Pixit program.

Pixit is a complete shape utility program. Its author intended it for use in schools, and its design is virtually foolproof. My only criticisms of Pixit concern the Picture Editor utility, but for shape creation and manipulation, I highly recommend this program.

SHAPES IN COLOR

Shapes in Color is the only one of these shape programs that creates multicolored shapes. You save the shapes with a 199-byte color directory that precedes the shape directory.

Shapes in Color is the only one of these shape programs that creates multicolored shapes.

The 52-page manual effectively covers the use of the program, including a step-by-step tutorial for creating an image of a candle and a summary of commands. In addition, it has several documented sample programs for using hi-res graphics and shape animation.

The excellent demo includes five attractive shape fonts, as well as animations and screen displays that use six different shape tables. A series of multicolored cards shows the potential of creating shapes in color.

Shapes

When you enter the Shapes program, you see a cluttered hi-res screen that includes a violet, 15 × 15-pixel plotting grid—you can also choose a different grid size, ranging from 5 × 5 to 40 × 25—and a green "field grid" in the lower right corner. The manual pronounces, "Each time the cursor is moved out of the display window (or field), it 'wraps around' to the other border of the display. The marker in the field grid indicates the new field being plotted in. If the field marker leaves the field grid, it disappears until the plotting marker has returned to a field that is within range of the field grid display. (This has no effect on the shape being drawn.)" Confused? Simple and elegant are not the words to describe this software.

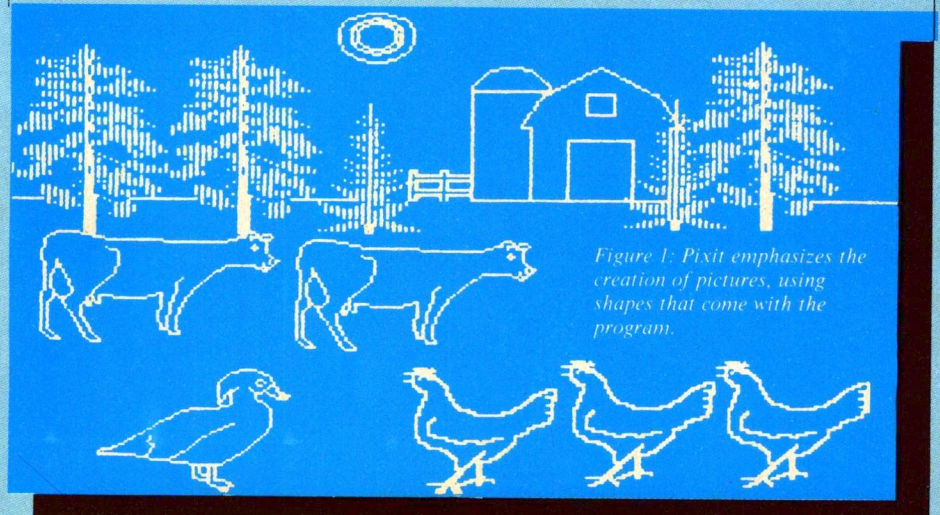
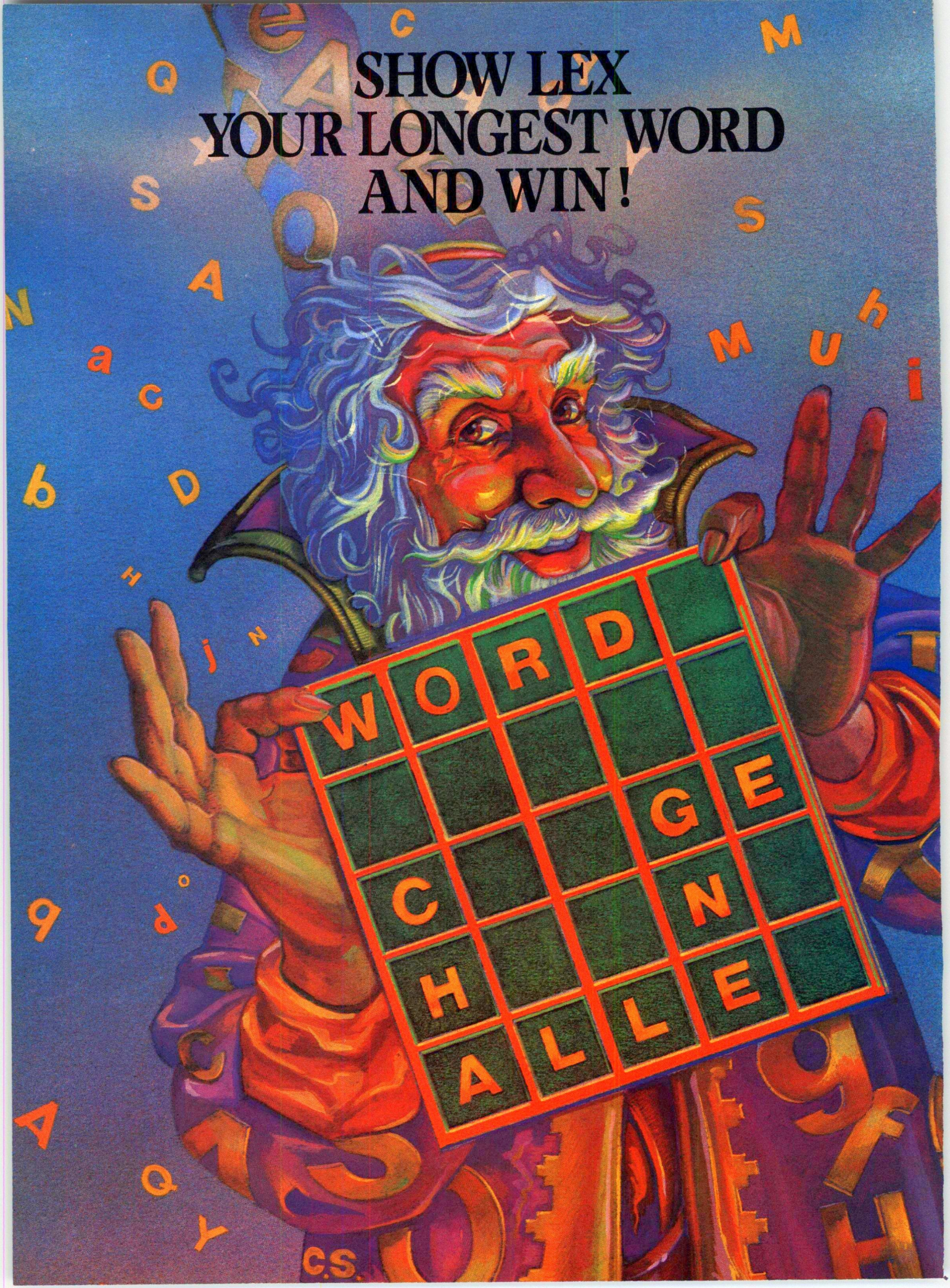


Figure 1: Pixit emphasizes the creation of pictures, using shapes that come with the program.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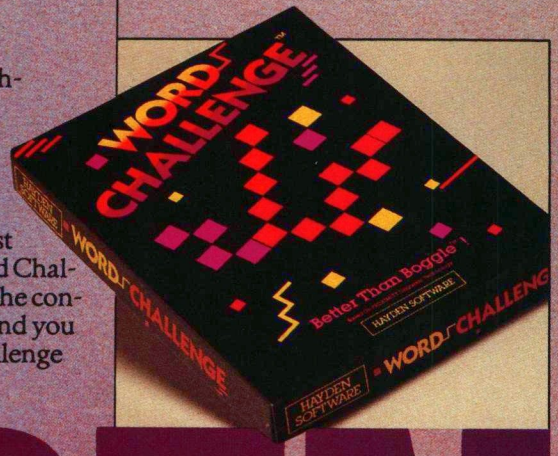

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On the same screen, directly above the green field grid, a small rectangle represents the relative size of a shape that would fill the entire plotting grid. Above the plotting grid is a color chart that shows the colors that you can plot. In the upper right corner is a color bar that indicates the shape color that you have selected. If you are working on a partially completed shape table, the first and last shape in memory are also displayed. When these shapes overlap the grid, you press T and Return to remove them, but you can call them back again when you need to refer to them. You can view the entire shape table, in groups of 20, by pressing R. The shapes may overlap.

Every time you want to plot a point, you must press P, because the program lacks plotting. When you plot on the grid, you get a magnified shape. (The actual-size shape appears below the grid and on hi-res page 2.) If you work on a large shape, you may be unable to see the entire shape on the bottom of the screen, so you must press Z to see your shape on page 2, and then press Return to go back to page 1. If you want to see the shape in its actual size while you are working, you can continue plotting on page 2, but you won't have a cursor. To find your place, you can press the space bar and a small cross-hair cursor appears momentarily. To see the length of your table, you must press ?.

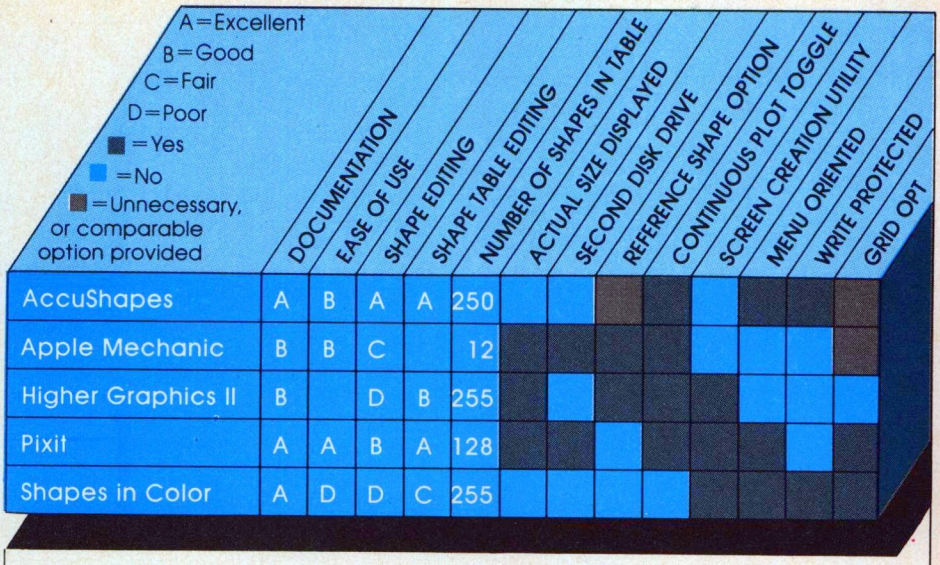
Background

The Background program allows you to design background screens for use with the shapes, as well as for the creation of title pages and other graph-

▶ USING SHAPES AND SHAPE TABLES

The following program listing gives you some pointers on what to do with your shapes and shape tables.

```
100  REM APPLESOFT BASIC PROGRAM
105  REM DEMONSTRATE THE
110  REM APPLE'S SHAPE DRAWING
115  REM COMMAND. BEFORE RUNNING
120  REM PROGRAM, CREATE A SHAPE
125  REM TABLE AND STORE IT ON
130  REM DISK IN DRIVE#1 WITH
135  REM NAME OF 'SHAPES'.
140  REM
145 A = 24576
150  REM A = ADDRESS TO LOAD
155  REM THE SHAPE TABLE AT.
160  REM CHANGE 24576 TO 768 IF
165  REM YOU HAVE A 16K APPLE.
170  REM !IF A=768, YOUR SHAPE !
175  REM !TABLE MAY NOT BE MORE!
180  REM !THAN 250 BYTES LONG  !
185 D$ =  CHR$ (4)
190  REM ************************
195  REM TO DRAW SHAPES ON THE
200  REM SCREEN, LOAD THE SHAPE
205  REM TABLE IN TO MEMORY.
210  REM THERE IS A FREE SPACE
215  REM AT LOCATION 768 WHICH
220  REM IS 240 BYTES LONG, AND
225  REM IDEAL FOR LOADING
230  REM SHAPE TABLES.
235  PRINT D$;"BLOAD SHAPES,A";A
240  REM ************************
245  REM NOW, YOU MUST TELL
250  REM BASIC WHERE THE SHAPE
255  REM IS BY DIVIDING ITS
260  REM ADDRESS (768) BY 256,
265  REM POKING THAT NUMBER INTO
270  REM LOCATION 233, AND
275  REM POKING THE REMAINDER
280  REM INTO LOCATION 232.
285 D =  INT (A / 256)
290 R = A - D * 256
295  POKE 232,R: POKE 233,D
300  REM
305  REM ************************
310  REM CLEAR AND ACTIVATE
315  REM THE HIGH RESOLUTION
320  REM DISPLAY WITH AN HGR
325  REM COMMAND.
330  HOME : TEXT
335  HGR
340  PRINT "HERE IS THE SHAPE AS
     YOU ENTERED IT"
345  REM
350  REM ************************
355  REM HCOLOR=N WILL DETERMINE
360  REM THE COLOR USED TO DRAW
365  REM THE SHAPE.  HCOLOR=1
370  REM SETS THE COLOR TO WHITE
375  HCOLOR= 3
380  REM
385  REM ************************
390  REM SCALE=N WILL MAKE THE
395  REM SHAPE N TIMES AS LARGE
400  REM AS IT WAS ORIGINALLY.
405  REM IF N IS 1, SHAPE'S SIZE
410  REM WILL NOT CHANGE.
415  SCALE= 1
420  REM
425  REM ************************
430  REM ROT=N WILL ROTATE THE
435  REM SHAPE (N/64)*360
440  REM DEGREES. AT SCALE=0,
445  REM N CAN HAVE 4 VALUES:
450  REM 0,16,32, OR 48.  AT
455  REM N=2, N CAN HAVE 8
460  REM VALUES: 4,12,20,28,
465  REM 36,44,52 AND 60. AT
470  REM N=5, N CAN BE ANY
475  REM INTEGER FROM 0 TO 63
480  ROT= 0
485  REM
490  REM ************************
495  REM 'DRAW N AT X,Y' WILL
500  REM DRAW THE NTH SHAPE
505  REM IN THE SHAPE TABLE AT
510  REM COORDINATE (X,Y) ON
515  REM THE SCREEN.
520  DRAW 1 AT 40,50
525  REM
530  PRINT "HIT RETURN TO ERASE S
     HAPE"
535  INPUT A$
540  REM
545  REM ************************
550  REM 'XDRAW N AT X,Y' WILL
555  REM DRAW THE NTH SHAPE IN
560  REM THE SHAPE TABLE AT
565  REM POSITION X,Y WITH THE
570  REM REVERSE OF THE COLOR
575  REM THAT IS ALREADY THERE.
580  REM IF BLACK IS THERE,
585  REM XDRAW DRAWS IN WHITE.
590  REM IF WHITE IS THERE,
595  REM XRDAW DRAWS IN BLACK.
600  XDRAW 1 AT 40,50
605  REM
610  REM ************************
615  REM NOW, USE THE PADDLES TO
620  REM MOVE THE SHAPE ON
625  REM THE SCREEN.
630  PRINT "HIT RETURN TO MOVE TH
     E SHAPE WITH"
635  PRINT "THE PADDLES"
640  INPUT A$
645  PRINT "TYPE ANY CHARACTER"
650  PRINT "TO GO ON"
655  REM ************************
660  REM RESET THE ROTATION AND
665  REM SCALE.
670  ROT= 0: SCALE= 5
675  HGR : HCOLOR= 1
680 X =  PDL (0):Y =  PDL (1) / 1
     .6
685  XDRAW 1 AT X,Y
690  REM LEAVE THE SHAPE ON THE
695  REM ON THE SCREEN FOR A
700  REM FOR A LITTLE BIT TO
705  REM ALLOW USER TO SEE IT.
710  FOR I = 1 TO 25: NEXT I
715  XDRAW 1 AT X,Y
720  REM IF NO KEY HAS BEEN
725  REM PRESSED ON THE APPLE,
730  REM THEN CONTINUE
735  IF  PEEK ( - 16384) < 128 THEN
     680
740  REM ************************
742  GET A$
745  PRINT "PADDLES NOW CONTROL T
     HE SCALE AND"
750  PRINT "ROTATION OF THE FIGUR
     E.  HIT ANY"
755  PRINT "KEY TO EXIT THE PROGR
     AM."
760  REM ************************
765  REM CLEAR GRAPHICS SCREEN
770  REM AND SET COLOR TO WHITE
775  HGR : HCOLOR= 1
780  ROT=  PDL (0) / 4
785  SCALE=  PDL (1) / 8 + 1
790  XDRAW 1 AT X,Y
795  REM WAIT A LITTLE WHILE SO
800  REM THE USER CAN SEE WHAT
805  REM IS ON THE SCREEN.
810  FOR I = 1 TO 25: NEXT I
815  XDRAW 1 AT X,Y
820  REM IF NO KEY PRESSED,
825  REM CONTINUE...
830  IF  PEEK ( - 16384) < 128 THEN
     780
832  GET A$
835  TEXT
840  END
```



ics displays. Unless you are thoroughly familiar with the graphics-screen layout of the Apple and you have prepared a complete rendering of your design on graph paper, you will have a great deal of difficulty with this utility. You input lines, shape placement, and color blocks by keying in the exact x, y coordinates. You can't take a shape, move it around to see how it will look, and then draw it. To draw freehand, you use ten keys to move the cursor horizontally, vertically, or diagonally. T toggles between continuous and manual plotting, and when the T option is set to continuous, you have to hold down a direction key and the Repeat key to get a continuous plot.

Modify

This utility allows you to transfer shape tables from one disk to another, to construct a table of shapes by combining shapes from one or more tables, and to edit tables. You can delete shapes from the end of a shape table, change the name of a table, review the shapes in the table, append shapes to the end of a table, expand a table, and insert and replace shapes in a table. To edit shape tables, you work with three files—the original; a second, temporary one to hold the shapes you will be inserting; and a third, new file that you'll create by combining the original and temporary tables.

Other Utilities

Convert allows you to take a standard Applesoft shape table and convert it to the format Shapes in Color requires. Hardcopy allows you to get a printout that gives you the date, the name of the shape table, the number of shapes in the table, and the length of the binary file.

This program, more than any of the other packages we've looked at, explains everything you need to know about working with shapes and shape tables. The demos and the documentation are superb. Using the utilities, however, is frustrating. I found Shapes in Color to be the most difficult program of the five I reviewed.

WEIGHING THE CHOICES

No one shape-utility package will answer all your needs. Each offers options that are unavailable in the others. You must decide what your priorities are and select accordingly.

Working with Applesoft shapes can be challenging and fun. With a good shape-creation program and the hints provided here, the possibilities are endless. ✚

▶ PRODUCT INFORMATION

Higher Graphics II
By Robert C. Clardy
Synergistic Software
830 North Riverside Drive,
Suite 201
Renton, WA 98055
(206) 226-3216
List Price: $35.00

Pixit
By Michael Darooge
Baudville
1001 Medical Park Drive S.E.
Grand Rapids, MI 49506
(616) 957-3036
List Price: $49.95

Shapes in Color
By Harry Moneyhun
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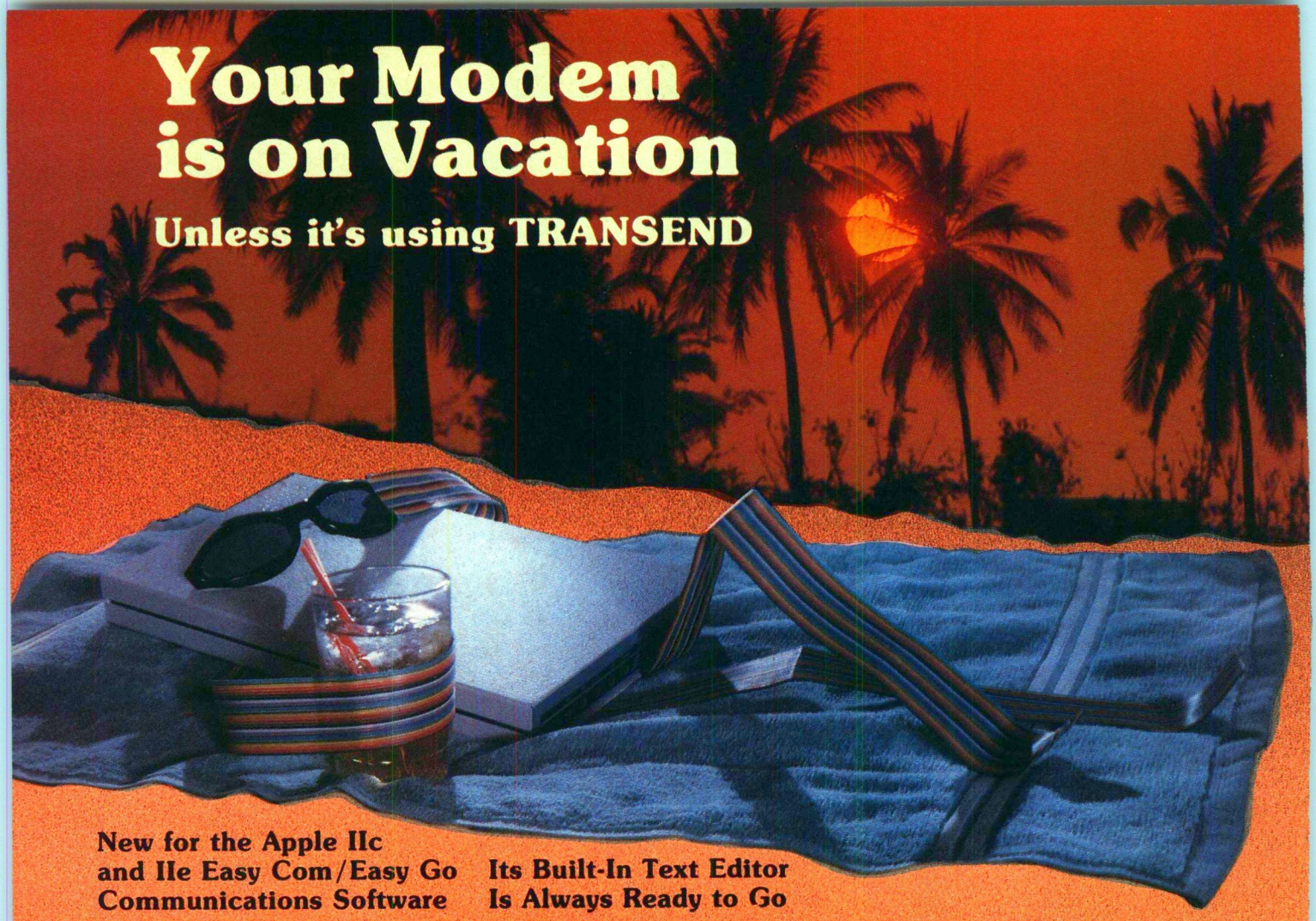


New for the Apple IIc and IIe Easy Com/Easy Go Communications Software

Introducing the telecommunications software that will put your modem back to work. If you want to send a letter, chat on the Source℠, check your financial situation on Dow Jones℠, get flight information on OAG, check the news and sports out on Newsnet, obtain some legal or medical files with the Knowledge index, send an overnight letter through MCI mail or Western Union's Easy Link, or even line yourself up with a date in a city you'll be traveling to, then get your modem back to work with Easy Com/Easy Go, new from TRANSEND.

If you want to swap files, programs, or games, Easy Com/Easy Go will do it in either CP/M, DOS 3.3, PASCAL, or PRODOS — and we'll even verify your transfer to make sure you've got it all and in good order.

Its Built-In Text Editor Is Always Ready to Go

Now with Easy Com/Easy Go you can write or receive information, replace a word or sentence, move a paragraph, or modify the margins. All this is a simple job for Easy Com/Easy Go. Then with just one keystroke you have sent it—and at a speed of over 670,000,000 MPH. Print it, or save it on disk just as easily.

It's Simple But Not Stupid

It knows the basics such as telephone number retention, Auto-Logon, on line printing, has a big Capture Buffer and auto disk save. But that's not all. Easy Com/Easy Go also handles advanced operations including keyboard macros, redefinition of the keyboard, XON/XOFF, verification protocol, and multiple flow control options. It works as well with most modems as it does with Transend's own modem, and at speeds up to 1200 Baud. Compatible with all Apple II's, Easy Com/Easy Go is so simple even a mouse can use it.

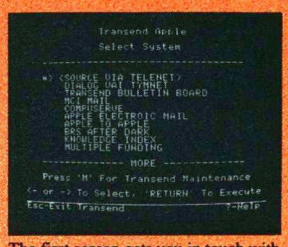
Limited Time Offer

With each purchase, receive offers worth over $400 from leading information services like Dow Jones News Retrieval℠, The Source℠, MCI Mail, OAG, Newsnet, Dialog Knowledge Index, and Western Union Easy Link.

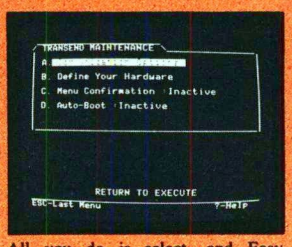
Money Back Guarantee

If Easy Com/Easy Go doesn't put your modem back to work within 30 days, we'll give you your money back.

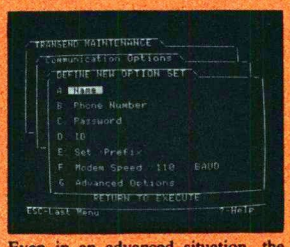
So Easy You'll Think *You're* on Vacation



The first screen gets you in touch with a service — **preprogrammed.**



All you do is select, and Easy Com/Easy Go does the rest.



Even in an advanced situation, the screens are easy to use.

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programming contest

How to Get Your Own Listing

Please note that we are not printing listings of winning programs in *A+*. You have several options for obtaining listings, including the ability to download the program directly into your computer via CompuServe. Here are the ways you can obtain the listings of the winning software of the *A+* Program of the Month contest:

1. Download the program directly into your Apple from CompuServe. Log onto CompuServe (you must already be a member) and type GO PCS51, which will bring you to the Apple User's Group area. The computer will then automatically guide you through the system with a series of menus and help screens. If you have any questions, you can send a message directly to us via CompuServe's electronic-mail system. *A+*'s ID number is 72356,2673. If you want to contact CompuServe, its phone number is (800) 848-8199 (in Ohio, dial (614) 457-0802).

2. Watch *A+ Disk Magazine* for listings of our contest winners. Future issues of *A+ Disk Magazine* will have the winning program, ready to run, on the diskette.

3. Write to us for the listing. If you don't belong to CompuServe and don't get *A+ Disk Magazine*, then you can write to us, and we'll send you a copy of the listing. Be sure to state the name of the program, the month that it won, and include a self-addressed, stamped envelope.

▶ **CONTEST WINNER**

Home Improvement Program

From William L. Grieb comes a program that tallies your possessions, room by room.

Congratulations to William L. Grieb of Radcliff, Kentucky, who is September's Program of the Month contest winner. Mr. Grieb will receive $500, and we'll enter him in our special $1000 grand-prize contest. This month's winning program, entitled Home Inventory, generates an inventory of all the items in your home for insurance purposes.

Mr. Grieb offers these comments about the program:

My insurance company couldn't believe the stated value of the contents of our home. They wanted a complete list of everything. After I wrote this program, I created the inventory and gave them a copy of it. I also put a copy in our safe-deposit box just in case we had a fire. The insurance company was impressed, and I felt much better.

This program will let you go through your home, room by room, adding everything along with its dollar value. You can start with any room and later add to the inventory or edit any item in the inventory. You can save the inventory to disk in a text file. As long as you save them by different names, you can make inventories of many homes. The printout, by room, shows the amount each item is worth and prints the grand total after each room. When you are finished, you have the value of each item, total value of each room, and total value of the contents of the entire home.

The Program

The program can accommodate 20 rooms, with 100 items in each room. You can change these dimensions if you need to. When you boot the program, it will ask you for the "name of household." If your file is already on disk, type Return (the disk will be cataloged so you can select the household to load). If you are starting a new file, type in the name of the household. When the program asks you for an address, type the complete address, including city and state. Be sure to give each room a different name when typing in room names. Example: bedroom 1, main bedroom, spare bedroom, or master bedroom. If you are using this program for insurance purposes, remember that the higher your grand total goes, the higher your insurance will be.

In the Edit mode, you can scan from room to room. When you come to the room you want to edit, type #. The edit menu, which lets you add or edit anything in the room, will appear. This menu also lets you add another room or change a room name.

Function of Program Lines

1020 to 2010	input information
3000 to 3084	print on screen
3500	edit menu
3201	edit
3300	add new item
3400	change room name
4000	save to disk
5000	save to printer
6000	catalog and load from disk
7000	front page and dimensions

Use Control-C to exit from the program.

A+

PROGRAMMING CONTEST

W + I + N

a $500 monthly prize/a $1000 yearly grand prize

Here's your chance to have your software masterpiece published in a national magazine and win some cash too! The rules are simple:

✚ Send us your program on a diskette and be sure to label the diskette with your name and address so we can return it. Also tell us what operating system and language you used and any special hardware requirements.

✚ Include a listing and an explanation of what the program does and how it works.

✚ You can write in any computer language for any Apple-family computer. Programs must be no more than 200 lines (4 pages) long and must be complete and bug-free.

✚ We'll pick winning programs based on a combination of usefulness, entertainment value, clarity of presentation, and/or topic. Rulings will reflect our personal preferences.

✚ We'll pay $500 for the right to publish your program and $1000 for the best program of the year. You must certify that your program is original and has not been published or distributed anywhere else.

✚ **Mail your entries to:**
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RGB COLOR BOARDS

Apple 11, 11+, 11e; Franklin ACE 1000, 1200, 100 (color or monochrome)

The Color Master VCB-8

The new video board that provides RGB (red/green/blue) video signals for crisp, vivid displays of color graphics and text, with exceptional resolution and color quality, is now available.

Can be used with 80 column text, so both color graphics and text are displayed on **one** RGB monitor. **Text can be displayed in anyone of 8 colors, software selectable.** A text **mode enhancement circuit improves resolution and readibility.** Board plugs into **slot 7** and comes with 4' cable for signal output. **Optional monitor connector**, wired to cable is available (specify RGB monitor make and model).

For the Apple 11 or 11+, the optional **VSS-80 softswitch or VSP-80 switchplate** can be used to interface **Videx Videoterm** or **Ultraterm** or other similar boards. For **Franklin** computers, the **VSP-80** is available to implement this feature.

For further information contact your computer dealer/ distributor or:

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The Kaleidoscope VCB-24

Has the same specs. as the COLOR MASTER, with the following added features:

Each text line of 24 lines of text can be independently set to any one of 8 colors, on any one of 8 colors of background. Software provided.

Signal output: RED, GREEN, BLUE, Sync., both composite and H&V. Levels are TTL, both + and —; other outputs: ± 5VDC, +12 VDC. Signals are American Standard. European version is available. Universal RGB monitor compatibility.

ORDERING INFORMATION: (board model nos.)

APPLE	11, 11+	11e	Price
ColorMaster	VCB-8+	VCB-8e	$139.00
Softswitch	VSS-80	don't need	45.00
SwitchPlate	VSP-80	don't need	30.00
Kaleidoscope	VCB-24+	VCB-24E	199.00
FRANKLIN	**Ace 1000, 1200 (rev. B)**	***Monochrome Ace 1000,100**	**Price**
ColorMaster	VCB8-EF		$169.00
ColorMaster		VCB-8F	139.00
Kaleidoscope	VCB-24EF	VCB-24F	219.00
SwitchPlate	VSP-80	VSP-80	30.00

(*earlier models that did not have color)
Monitor connector, wired to cable: $20.00

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Gives user access to the following:
1) Four 8 bit input or output ports (total 32 lines of I/O)
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3) Four powerful 16 bit timers, real time or stopwatch.
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6) Suitable for robotics or other control of external equipment. TIO-8 **$169.00**

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Memory	0 to 384K	0 to 384K	0 to 384K
Parallel/Serial	Yes	Yes	Yes
Clock/Calendar	Yes	Yes	Yes
Game Port	Yes	Yes	No ($50 list Opt.)
Software	Yes	Yes	Yes
Warranty	1 Year	1 Year	1 Year
ACP Price with 0K	199.00	229.00	229.00

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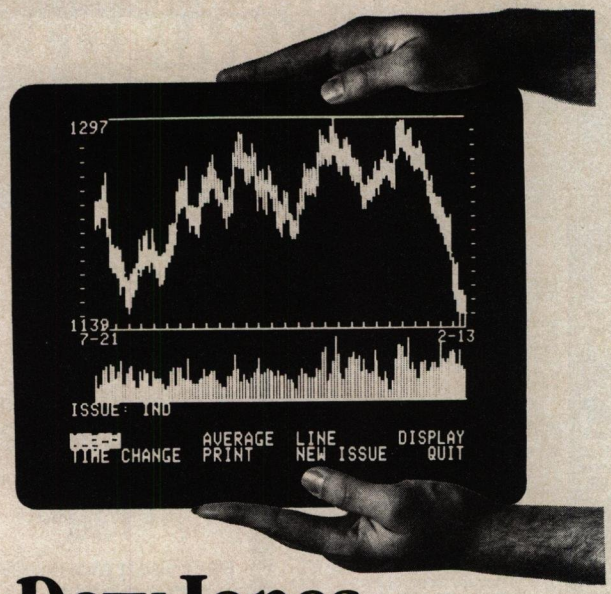

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CIRCLE 106 ON READER SERVICE CARD

▶ TUTORIAL/BY ROBERT COWART

HOW TO dBASE II

PART XI

In a tutorial series on dBase II, a popular program for database management

Welcome to our ongoing series of tutorials on the increasingly popular microcomputer data-management tool dBASE II. If you have been following along through the last ten installments in *A+*, you should now be fairly adept in many of the rudimentary as well as some of the more complex techniques for creating databases, storing information in them, and keeping that information up to date. We've also covered most of the approaches for data retrieval, including the use of sorted and indexed databases as well as "operators," memory variables, some "functions," and commands that accomplish large-scale modifications of an interaction between existing data files.

Another command that falls under this last category is Update. Update can be a real timesaver in systems that use several interconnected databases. Before we get started, though, here are a few points for newcomers:

Tutorial Conventions

These tutorials contain many examples. Sometimes I ask you to type in a command, and then dBASE II responds. Just to differentiate between what you do and what dBASE II responds with, the lowercase words are the ones you type. Uppercase works too, so it doesn't really make a difference—it's just clearer this way. Some examples may specifically ask you to type uppercase letters but these cases always involve a series of words between quotes. The dBASE II responses are usually in uppercase letters. All screen interactions are in different type to distinguish them from the text. To make these sections more readable, carriage returns are implied rather than included.

In the command-syntax examples, words between square brackets (e.g., [scope]) indicate an optional phrase or "argument."

Instant Update

The basic gist of Update is that it lets you modify an existing database with information from another database. Say you have two files that overlap in some way. For example, your stereo retail shop may have an inventory list as well as a receiving list. Each time you receive new stock, you append the receiving list in dBASE II, recording the items. Sometimes the items' prices have changed, and you need to record this information.

After several shipments have arrived, you want to bring your inventory list up to date, reflecting your increased stock and possibly altered prices. You can take care of this chore by printing out the receiving list and then editing the inventory file by hand—a tedious process. Or you can let dBASE's Update command do it automatically.

Finding clearly written information on the Update command isn't easy. In this respect, Update is a bit like the

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CIRCLE 340 ON READER SERVICE CARD

subtotal option in the Report command (which I did my best to render less obscure in a previous issue.) To make things worse, the command has many options. In version 2.3 of dBASE, the Update command is limited, but 2.4 expanded it a lot. See figure 1 for the full syntax.

After reading this syntax the first time, I was lost, too! Let's get a handle on it by starting with an example of the simplest form of the command on the databases in figure 2 (please create them if you intend to follow along).

See what happened? The records I marked with the arrows have been updated as follows: The quantity field has been added to, and the Cost and Price fields have been replaced. The rec-1 database supplied the data for the changes. A translation of the command we used goes something like this:

dBASE II:

```
UPDATE ON part:numb FROM rec-1 ADD
quantity REPLACE cost,price
```

English:

Dear Computer,

Open the inv-1 file first. Then look at the rec-1 file, starting at the top. Compare the part number in the rec-1 file with the part number in the open file (inv-1). If they are the same, add the quantity in the rec-1 file to the quantity in inv-1 and replace the cost and price fields with the cost and price fields in rec-1. If the part numbers aren't the same, then figure out which one is smaller in value. Skip forward one record in whichever database has the smaller value and try the whole thing again.

A few things to remember:

- You must open the database you are modifying with Update by invoking the Use command before updating, and you must index or sort it on the "key" field (the one you're using for the comparison—in our case, PART :NUMB.)
- The other database (called the From database) must meet two requirements:
  1. It must have at least some fields in common with the Use database (same field size and type).
  2. It must be sorted on the "key" field.

Once you feel comfortable with the general idea of Update, we can expand on it with further complications (or opportunities, depending on your orientation). First, look back at the full syntax again. Notice the clause

```
[<field> WITH <fromfield>]
```

What does it mean? Well, just in case your field names in the From and To databases don't match, this clause eliminates the need to do the Copy Structure-Modify Structure-Append routine necessary to change field names without destroying data. So, let's say the Cost field in rec-1 is called Cst. The command will look like this:

```
UPDATE ON part:numb FROM rec-1 ADD
quantity REPLACE cost with Cst,price
```

Cost in the first database will be replaced by Cst in the second database, and Price in the first will be replaced by Price in the second.

Finally, let's consider the Random clause. If you use this clause, then dBASE assumes that the From file is not sorted into order but is instead in random order. This clause is handy if you don't have time to do a sort (which can take eons on large files). The catch is twofold, though:

1. The To file must be indexed (not sorted) on the Update key, and that index must be in use.
2. The Update key must be a single field key only and one that can "match" index entries in the To file. This restric-

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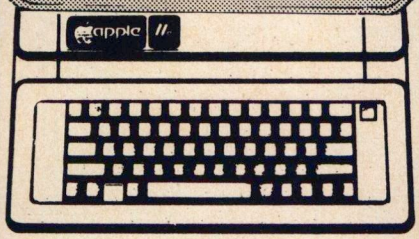

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CIRCLE 265 ON READER SERVICE CARD

tion arises because dBASE uses the Find command internally to do the update when you stipulate the Random clause. You see, keys *can*, at other times, be created from parts and values of several fields in combination, but that technique is not allowed in this instance.

So there you have it. The combinations are endless and the limitations a bit obscure until you experiment with this command for a while.

One thought: Say you want to update an inventory file from a sales file. Since Update can only add and replace, subtracting an item from your inventory may be impossible. Any ideas (such as adding negative numbers or the like)? Write to me and let me know, c/o *A+* Magazine, 11 Davis Drive, Belmont, CA 94002. ✚

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```
UPDATE FROM <filename> ON <key>                [ADD <fieldlist>] [RANDOM]
                                               [REPLACE [< fieldlist >]]
                                               [<field> WITH <fromfield>]
```

Figure 1: Full syntax of the Update command

```
STRUCTURE FOR FILE:  A:INV-1.DBF
NUMBER OF RECORDS:   00010
DATE OF LAST UPDATE: 00/00/00
PRIMARY USE DATABASE
FLD                    NAME                TYPE              WIDTH              DEC
001                PART:NUMB                N                 005
002                CATEGORY                 C                 010
003                BRAND                    C                 010
004                MODEL                    C                 006
005                QUANTITY                 N                 002
006                COST                     N                 006                002
007                PRICE                    N                 006                002
** TOTAL **                                                   00046
 . list
00001        1 RECEIVER   NIZO        T-33          5          225.49        350.49
00002        2 RECEIVER   NIZO        T-35          4          312.00        425.25
00003        3 RECEIVER   ACME        R25-MT       13           19.99         49.99
00004        4 RECEIVER   NADIR       2-CHP        50           12.95         29.99
00005        5 SPEAKERS   RAZCO       L-55         30          199.00          0.00
00006        6 SPEAKERS   TALBEST     BG-20         6          250.00        350.88
00007        7 TAPE DECK  ROLLEM      CAS-3        10          125.65        212.99
00008        8 TAPE DECK  FLOWUTTER   WBL-5         5          149.33        250.77
00009        9 TURNTABLE  XIRTAM      25-L          5           99.99        149.99
00010       10 TURNTABLE  RALURIC     RND-1         3          595.00        850.00

 . use rec-1
 . disp structure
STRUCTURE FOR FILE:  A:REC-1.DBF
NUMBER OF RECORDS:   00000
DATE OF LAST UPDATE: 00/00/00
PRIMARY USE DATABASE
FLD                    NAME                TYPE              WIDTH              DEC
001                PART:NUMB                N                 005
002                QUANTITY                 N                 002
003                COST                     N                 006                002
004                PRICE                    N                 006                002
** TOTAL **                                                   00020

 . list
00001                    1                  3                230.00            355.00
00002                    3                 10                 50.33             75.82
00003                    8                  7                159.99            175.88

update on part:numb from rec-1 add quantity replace cost,price
 . list
00001      1 RECEIVER   NIZO        T-33          8          230.00        355.00    <--
00002      2 RECEIVER   NIZO        T-35          4          312.00        425.25
00003      3 RECEIVER   ACME        R25-MT       23           50.33         75.82    <--
00004      4 RECEIVER   NADIR       2-CHP        50           12.95         29.99
00005      5 SPEAKERS   RAZCO       L-55         30          199.00          0.00
00006      6 SPEAKERS   TALBEST     BG-20         6          250.00        350.88
00007      7 TAPE DECK  ROLLEM      CAS-3        10          125.65        212.99
00008      8 TAPE DECK  FLOWUTTER   WBL-5        12          159.99        175.88    <--
00009      9 TURNTABLE  XIRTAM      25-L          5           99.99        149.99
00010     10 TURNTABLE  RALURIC     RND-1         3          595.00        850.00
```

Figure 2: Using the Update command

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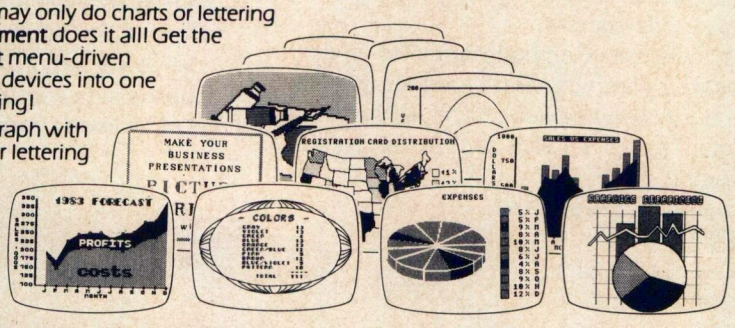

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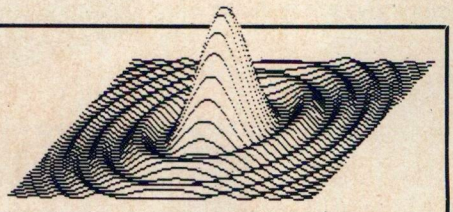

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View picture before printing	X	—	X
Print any portion of picture	X	—	X
Select a portion of a picture using a graphic "window"	X	—	—
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Print horizontally or vertically	X	X	X
Print anywhere on page	X	—	X

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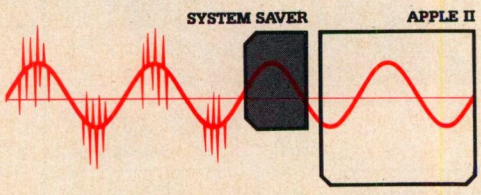

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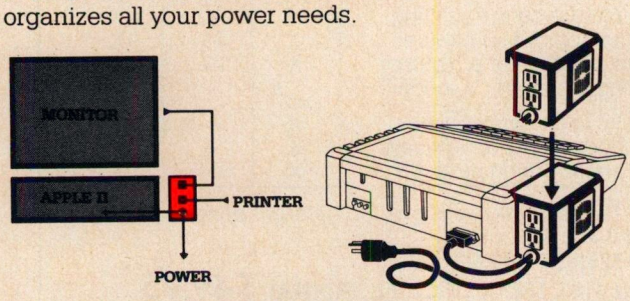

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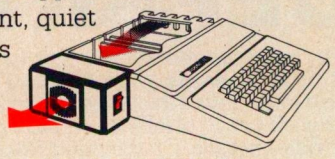

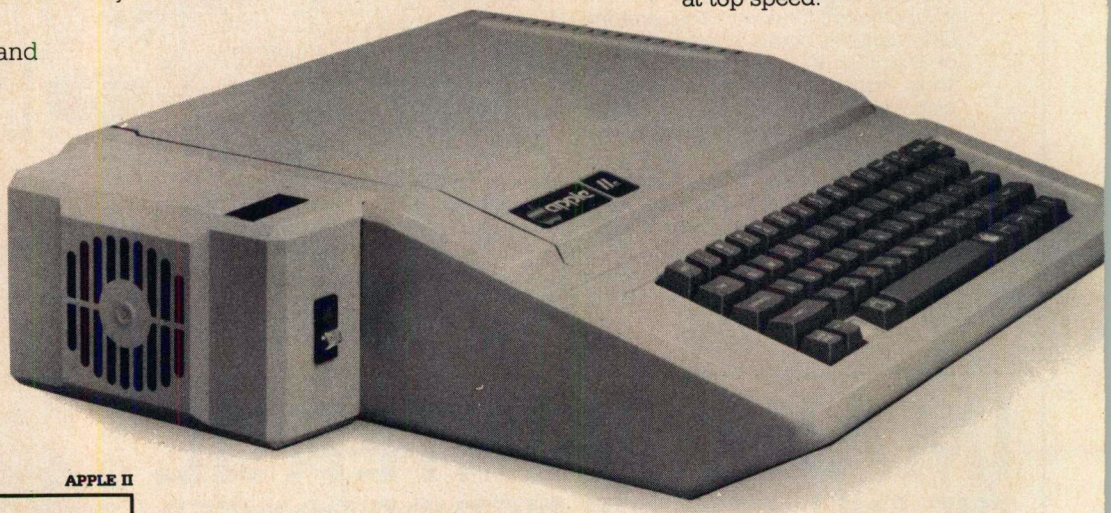

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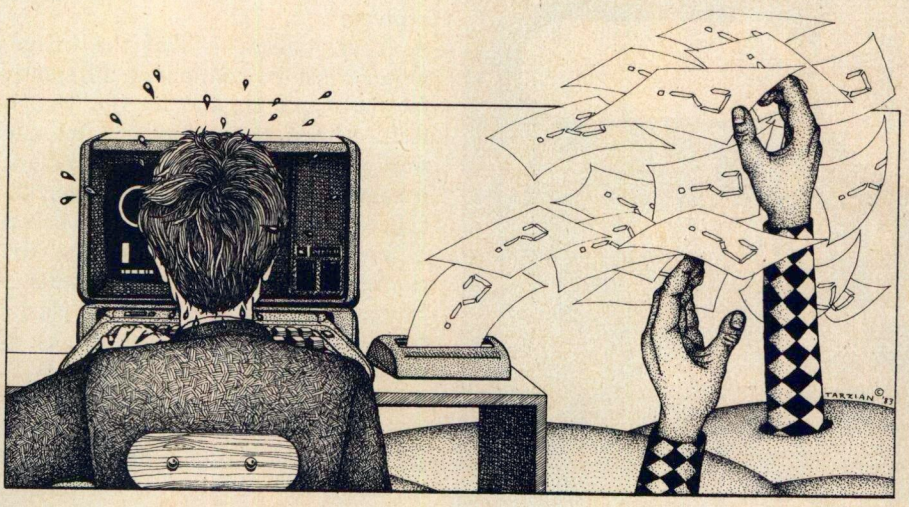
RESCUE SQUAD
BY FREDERIC E. DAVIS
Questions from our readers



OPTICAL CHARACTER READERS

Q. *Our school library has an Apple II Plus with 64K RAM, one floppy-disk drive, and a Corvus 10-megabyte hard-disk drive. We are typing the information from our card catalog into the Apple in order to convert our card catalog to a computer database. Typing in all the thousands of cards has been going very slowly, and we estimate that it will take between six and eight years to input all the cards at the current rate. Is there some type of optical character reader that will enable us to get the information into the computer more quickly?*

A. Several types of optical character readers (OCRs) are available that can read your card catalog into the computer. The fastest, most versatile machine I know of is the Kurzweil Data Entry Machine from Kurzweil of Cambridge, Massachusetts. This OCR can read all types of printed materials quickly and can transmit the data to your Apple, using an RS-232 serial-communications link. The drawback of the Kurzweil is that it is an expensive machine costing tens of thousands of dollars. One solution would be to rent time on a Kurzweil if you can locate one in your area. A lower-cost solution is to use the new hand-held OCR called Omni-Reader from Oberon International of Irving, Texas. This device is slower and less sophisticated than the Kurzweil, but it only costs around $500. This device also connects to your Apple via an RS-232 serial port and can read an 80-character line of text in two to three seconds. The Omni-Reader is a new product that I have seen only in a demo, but it looks like a significant new peripheral that delivers a lot of performance for a low cost. We'll be taking a closer look at the Omni-Reader in an upcoming issue of *A+*.

MAIL MERGE

Q. *I am having difficulty setting up a form letter to automatically fill in names and addresses using AppleWorks. Currently I have to cut and paste each name and address individually, which slows the process down considerably. Do you know of an instruction, command, or shortcut?*

A. The AppleWorks program and its cousin, III E-Z Pieces, are both a bit clumsy at merging a mailing list into a form letter. In order to remedy the situation, you will need a utility program such as Habamerge from Haba Systems, 15154 Stagg Street, Van Nuys, CA 94105; (213) 901-8828. Habamerge retails for $69.95 and is available in a version for either AppleWorks or III E-Z Pieces.

SCREEN CLEANING

Q. *Help! I have an Apple Monitor III, and my screen is so dusty that I can no longer see it without at least some difficulty. I've tried using a household cleaner, but that only makes the situation worse. I now have deposits between the ridges and ribs of the screen. I've been looking around for some type of commercial screen cleaner but, alas, to no avail. What should I do?*

A. The Monitor III and the Lisa both have antiglare filters covering their screens in order to reduce the eyestrain and fatigue that can be caused by the glare of light reflecting from the glass surface of the screen. The "ridges and ribs" you refer to are actually the fibers of a woven material that comprise the glare filter.

Apple provides a specially treated chamois cloth for the purpose of removing dust from the filter. If this special cloth doesn't do the trick (and in your case, I'm sure it won't), then Apple suggests cleaning the filter with a lint-free cloth moistened with a small amount of isopropyl alcohol (don't use the cloth provided with the monitor). If the filter is still dirty, you'll have to remove the filter and either thoroughly clean it with alcohol or have it replaced.

You should not try to remove the filter from a Monitor III, since you might damage the monitor. Instead, bring the monitor to an Apple dealer or service center.

If you're a Lisa owner, you can easily remove the front panel of the Lisa to remove the filter, but you should not try to remove the filter from a Monitor III, since you might damage the monitor. Instead, bring the monitor to an Apple dealer or service center, and the personnel will be able to clean or replace your antiglare filter.

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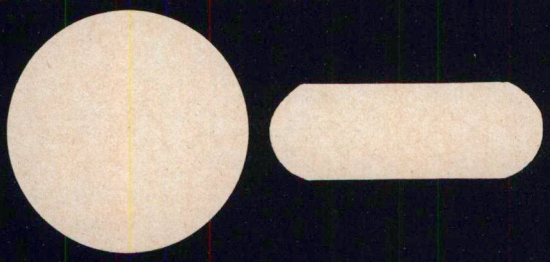

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800-442-1048 In Texas

▸ IMAGEWRITER WITH MAC

Q. *I have had an Imagewriter printer for about six months that I have been using with my Apple IIe. I recently bought a Macintosh and was told that it was compatible with the Imagewriter printer I already owned. I obtained a Macintosh/Imagewriter cable from my dealer, but the printer still does not work correctly. What could be the problem?*

A. Your problem is that the Imagewriter must be configured differently for the Apple IIe and for the Macintosh. Although the Imagewriter can work with any of the Apple computers, it contains some small on/off switches called DIP switches that must be set differently for various computers. You can reveal two small banks of switches by removing the top section of plastic from the printer. The two banks of switches are labeled SW 1 and SW 2. Figure 1 shows the proper configuration of the switches for the Apple II and III series, and figure 2 illustrates the correct switch settings for the Macintosh and Lisa computers. ✚

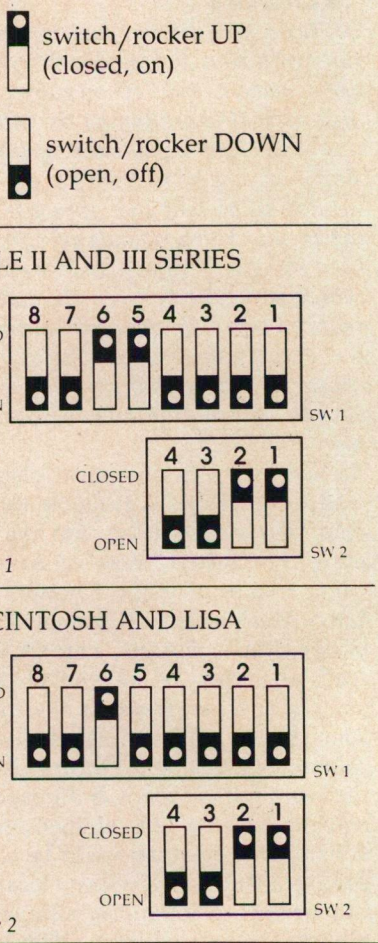
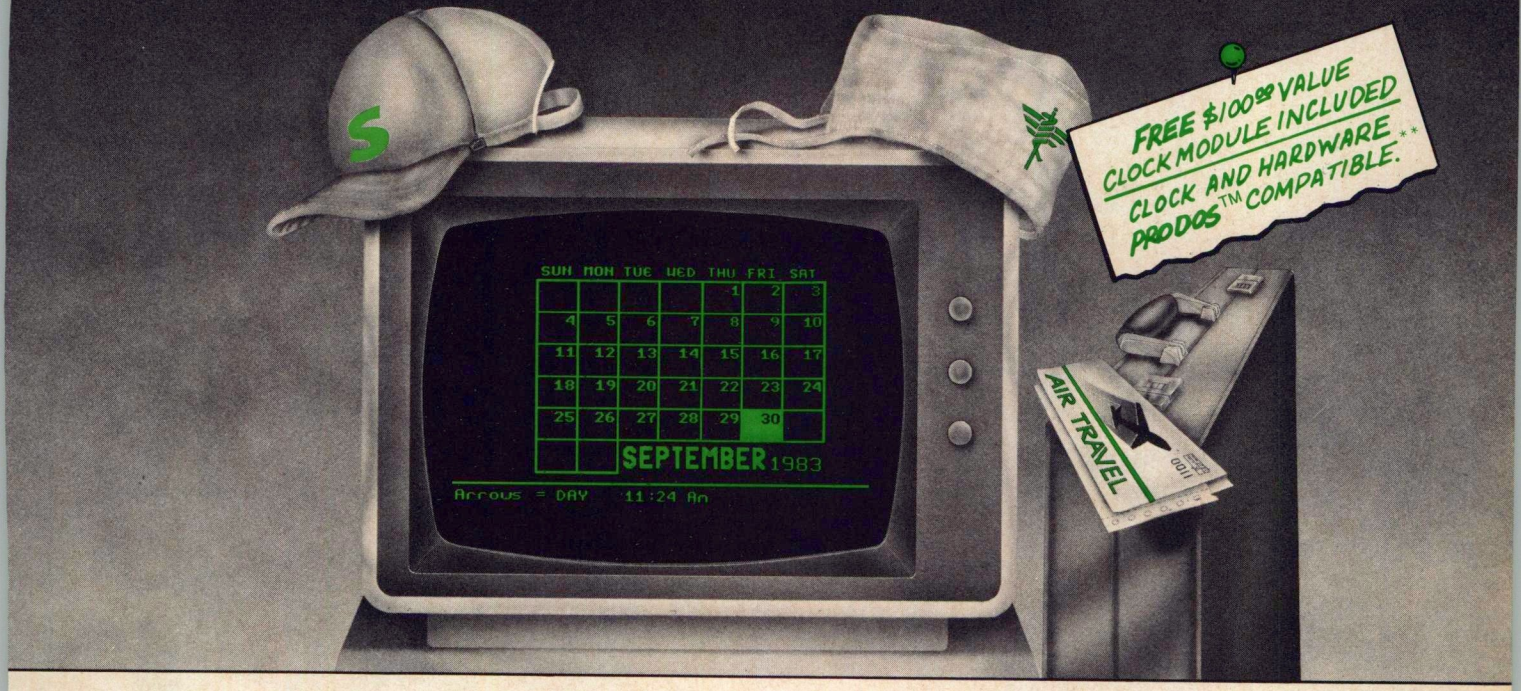


Figure 1

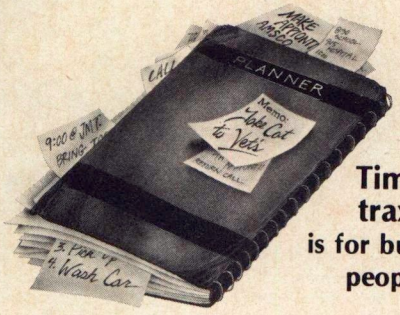
Figure 2

Please send your questions and problems to Rescue Squad, A+, 11 Davis Drive, Belmont, CA 94002.

Suzie's First Softball Game. . . The Two Places-At-Once Schedule . . .Meeting With The Boss.



Time-trax™ Would Have Remembered.



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Anaheim, CA 92802
(714) 535-1155

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Time-trax is written for 48K Apple® *** II, II Plus and IIE.

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800-432-7268 California
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*This offer expires December 31st, 1984.
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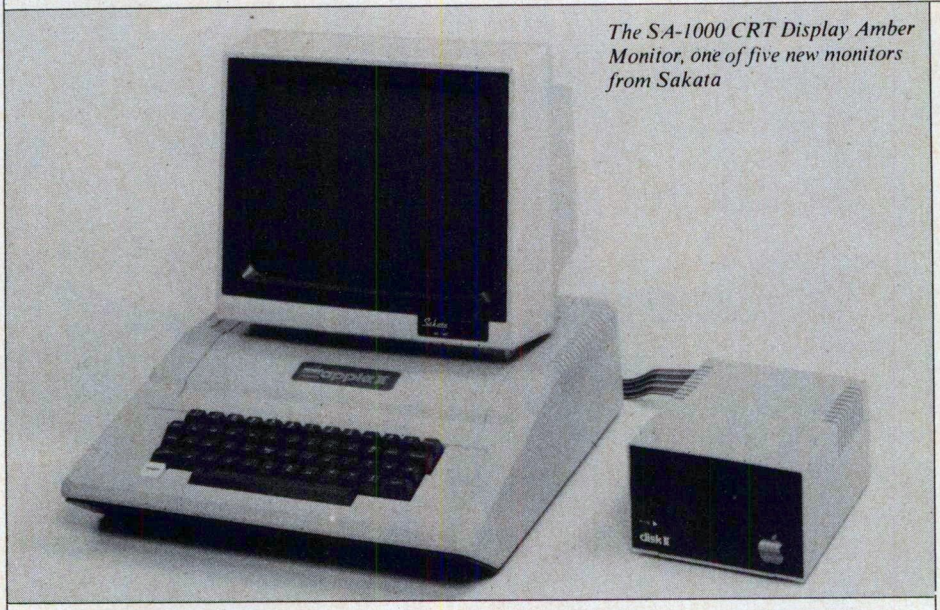


The SA-1000 CRT Display Amber Monitor, one of five new monitors from Sakata

HARDWARE

Five New Monitors from Sakata
The SC-100 CRT Color Display Monitor has a 13-inch screen, composite video input signal, display format of 1000 characters, and 230mm horizontal by 175mm vertical display area. *(List Price: $329)*

The 12-inch SA-1000 CRT Display Amber Monitor possesses amber PUM-type, nonglare high contrast; composite video input signal; scanning frequency of 15.75 KHz (horizontal) and 60 KHz (vertical); and a 2000-character display format. *(List Price: $159)*

Model SC-200 CRT Color Display Monitor has a 13-inch screen, a display area of 240mm (horizontal) by 180mm (vertical); a 2000-character display format; and 8 colors plus intensity (16 colors). *(List Price: $649)*

Sakata's SC-300 CRT Color Monitor displays 8 colors plus intensity (16 colors) on a 13-inch screen, with a 200-character display format, digital-amplifier video circuit, and display area of 240mm (horizontal) by 180mm (vertical). *(List Price: $899)*

Finally, the SG-1000 High-Resolution CRT Monitor is of phosphor green with nonglare high-contrast dark-face plate and 12-inch screen. *(List Price: $129)*

Requires: Amber Monitor—Apple II, II Plus, IIe, or IIc; other four monitors—Apple II family or Apple III

Sakata U.S.A. Corporation
651 Bonnie Lane
Elk Grove Village, IL 60007
(800) 323-6647, in IL (312) 593-3211

CIRCLE 502 ON READER SERVICE CARD

Computer Smart
This line of accessories for Apple II computers consists of two Computer Smart Cards, which come with either a Smart Mouse or Smart Ball.

The Computer Smart Mouse features dual-function buttons and opto-mechanical construction. The Smart Mouse/Smart Card combination allows Apple users to use virtually any Apple software.

The Computer Smart Ball provides 360° cursor movement through any desired position, plus speed control. The ball includes two quick-action function buttons and a quick-action fire button.

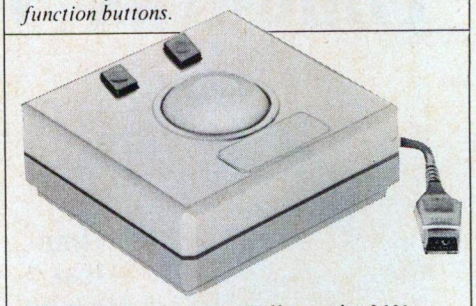
Both the mouse and the ball require a Wico Computer Smart Card, which is available in two versions—one for the Apple II and II Plus and one for the IIe. Users can define any character string up to seven characters long for each controller action. *(List Price: $249.95, Smart Mouse with Smart Card; $299.95, Smart Ball with Smart Card)*

Requires: Apple II, II Plus, or IIe

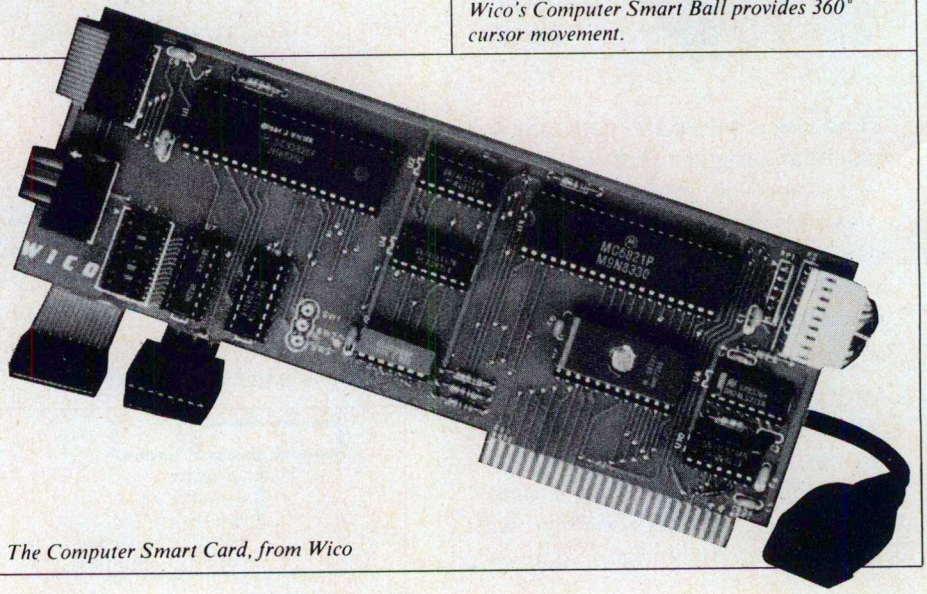
Wico Corporation
6400 West Gross Point Road
Niles, IL 60648
(312) 647-7500

CIRCLE 815 ON READER SERVICE CARD

The Computer Smart Mouse features dual-function buttons.



Wico's Computer Smart Ball provides 360° cursor movement.



The Computer Smart Card, from Wico

Muppet Learning Keys, from Koala Technologies

Muppet Learning Keys
This low-cost computer peripheral helps children age three and up learn letters, numbers, and colors, with the assistance of the Muppets. Muppet Learning Keys, Kids' Computer Keyboard simulates the familiar contents of a child's school desk—ruler, watercolor set, penmanship slate, compass, eraser, and arithmetic exercise book—to help a child learn basic skills.

Each section of the desk can be activated by the touch of a child's finger. Kermit the Frog, Miss Piggy, Gonzo, and Fozzie Bear provide friendly and humorous instruction, and a comic book on the desk provides command keys for the programs.

The new product is a sturdy, yet lightweight, unit that depicts schooldesk materials on a mylar surface over a circuit board. It connects to a computer display screen through the paddle port on the Apple. *(List Price: $79.95)*

Requires: Apple IIe or IIc; 128K RAM
Koala Technologies Corporation
3100 Patrick Henry Drive
Santa Clara, CA 95052-8100
(408) 986-8866

CIRCLE 503 ON READER SERVICE CARD

Amdek 5000 Series Printers
Amdek has released a new series of letter-quality daisy-wheel printers that can handle columns 132 characters wide and offer a variety of typefaces. All printers have a cassette-type ribbon and have built-in Centronics parallel and RS-232 serial interfaces.

The series consists of three printers: the Amdek 5025 printer, which is transportable and prints at a rate of 25 characters per second; the Amdek 5040, a desktop printer with a speed of 40 characters per second; and the Amdek 5055, a desktop printer with a print speed of 55 characters per second. *(List Price: $799, Amdek 5025; $1675, Amdek 5040; $1990, Amdek 5055)*

Requires: Apple II, II Plus, IIe, IIc, or III
Amdek Corporation
2201 Lively Blvd.
Elk Grove Village, IL 60007
(312) 364-1180

CIRCLE 504 ON READER SERVICE CARD

Amdek has introduced a 5000 series of letter-quality printers.

HARDWARE ACCESSORIES

The Case

A high-density, molded-plastic storage container, The Case contains cleaning solution and material that you need to maintain a personal-computer system. It holds two flexible disk-drive-head cleaning diskettes and cleaning solution; a CRT-screen cleaner; plastic-case cleaner; lint-free wipes; two printer-platen cleaners plus conditioning solution; antistatic spray. *(List Price: $50)*

PerfectData Corporation
9174 Deering Avenue
Chatsworth, CA 91311
(818) 998-2400

CIRCLE 517 ON READER SERVICE CARD

The Case contains cleaning solutions and materials for computers and their peripherals.

Apple Armor II

The Apple Armor II security cabinet enables you to lock up your Apple II computer and its disk drives to prevent theft or tampering. The cabinet's flip-up front cover allows you to slide out the computer or disk-drive components for easy servicing. You can mount your monitor on top of the cabinet, which is color-coordinated to Apple computers. The unit provides your system with proper ventilation and accommodates most available fans. *(List Price: $175)*

Requires: Apple II, II Plus, or IIe

Omni Tech Corporation
1455 North Barker Road
Brookfield, WI 53005
(414) 784-4178

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Apple™ Apple Computer, Inc.

Action-Research NW
11442 Marine Vw. Dr. S.W. / Seattle, WA 98146
(206) 241-1645 / Source: CL2542

CIRCLE 172 ON READER SERVICE CARD

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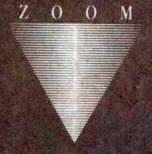
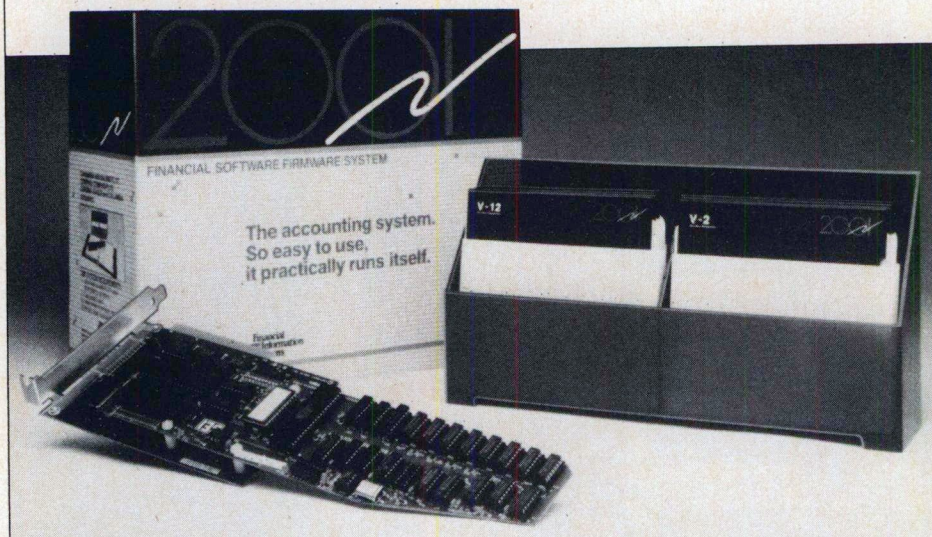
*SOURCE offer good through December 31, 1984.



ZOOM Telephonics/207 South St./Boston, MA/02111

CIRCLE 195 ON READER SERVICE CARD

PRODUCT NEWS



2001, from FIS, Inc.

▸HARDWARE/SOFTWARE

2001

Designed for small-to-medium-size businesses, 2001 is an integrated hardware and software accounting system with its own on-board computer. The board plugs into one of the expansion slots on Apple II-series computers. 2001 software is available for floppy or Winchester disk drives.

The full system includes the 2001 Business Computer, invoicing, accounts receivable, inventory, accounts payable, general ledger, payroll, departmental accounting, checkbook, and database-management system.

The Base Unit, which includes the business computer and general ledger, is available separately, as are the rest of the programs. *(List Price: $3995, Full System; $795, Base Unit; $595, Individual Modules)*

Requires: Apple II, II Plus, or IIe; one disk drive

Financial Information Systems
411 Industrial
Richardson, TX 75081
(214) 680-8696

CIRCLE 519 ON READER SERVICE CARD

Drum-Key

Drum-Key is an electronic-music interface board and software package for use with stereos, electric music amplifiers, and Apple II-series computers. It uses

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Push the red button that comes with PRINT-IT!˜ – Your program pauses instantly; touch RETURN and whatever is on your screen – text, graphics or both – is printed in color or black & white.

Whether your Apple II, II+, //e or "look-alike" is for business or pleasure, you'll want the ability to pause and take snapshots of your screen displays and then continue from exactly where you paused, all at the touch of a button – games, business data, menus, educational instructions, graphics – even CP/M**. PRINT-IT!˜ will print your screen at any time no matter what program you're running, as well as perform every function you expect of an intelligent printer card.

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PRINT-IT!˜ is available at your local computer store now! If they don't have it in stock, ask them to get it for you.

PRINT-IT!˜ is also available for $199 directly from Texprint with an unconditional money-back guarantee. Just return it in good condition within 30 days of purchase, postpaid, for a full refund. Qualified educational and dealer discounts available.

Texprint's Model 2 (with most PRINT-IT!˜ functions, except the push button pause/print feature) is the next best printer interface available anywhere, and for only $149.

* ˜Apple Computer
** ˜Digital Research
*** ˜Videx, Inc.

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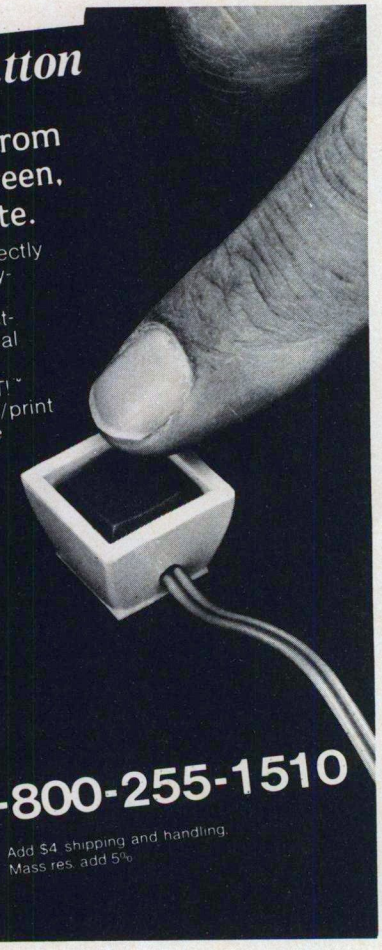
Needham Heights, MA 02194
Tel. (617) 449-5808



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Requires: Apple II, II Plus, or IIe; 48K RAM; one disk drive

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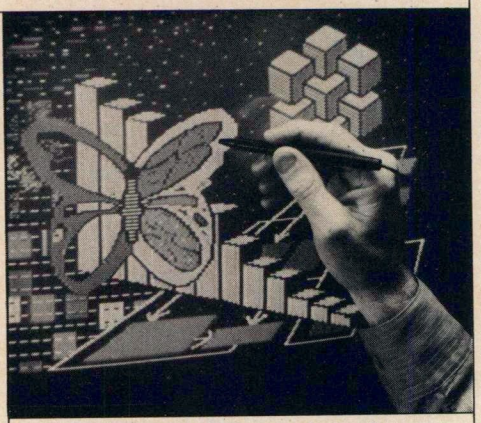
Requires: Apple II, II Plus, IIe, or IIc; 64K RAM; one disk drive

Koala Technologies Corporation
3100 Patrick Henry Drive
Santa Clara, CA 95052-8100
(408) 986-8866

CIRCLE 521 ON READER SERVICE CARD



Koala Technologies' Gibson Light Pen lets you draw directly on the screen.

SOFTWARE

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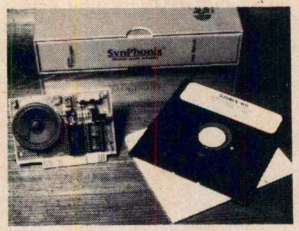

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EMPIRE BLDG.	Pro DOS Operating System	YES-FREE	NO	PATIENT RECALL
	Full Screen Editor	YES	NO	
STOCK ANALYSIS	Works on APPLE II +, IIe, IIc, III, Franklin	YES	YES	CUSTOMER ACCOUNTS
	Arrow Keys function OK	YES	NO	
	Multiple Index Files	YES	NO	
	Supports 80 Column Displays	YES	NO	
	Comprehensive User's Manual	YES	YES	
DATING ANALYSIS MATCHING	Cost: Data Base	$69.95	$89.00 +	CHURCH/CLUB MEMBERSHIP ANALYSIS
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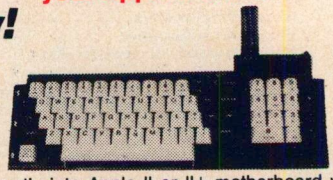

• Plugs directly into Apple II or II+ motherboard with 16-pin ribbon cable connector • 26 special functions • Size: 14"L x 5½"W x 1½"H • Color (keycaps): white/grey • Weight: 2 lbs.

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Board: High density board design squeezes 64K bytes of RAM onto a 2½" x 4½" board • Fully tested to assure proper operation.

Uses: Word processing — displays 1000 more characters per screen • Extra memory allows running of extremely large programs • Ultra High Resolution Graphics capability.

JE864. . . $124.95 ~~$149.95~~

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CIRCLE 276 ON READER SERVICE CARD

PRODUCT NEWS

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Requires: Apple II, II Plus, IIe, or IIc

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6069 Groveoak Place, #12
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The series will include The Home Accountant, The Tax Advantage, The Home Cataloger, File/Cataloging/Mailing, the CPA Series, and Property Management. The Home Accountant and The Home Cataloger include 80-column capability, allow you to use both uppercase and lowercase input, and run under ProDOS. *(List Price: $74.95, Home Accountant; others to be announced)*

Requires: Apple IIc, or Apple IIe with 128K RAM and 80-column board

Arrays, Inc.
11223 South Hindry Avenue
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(213) 410-9466

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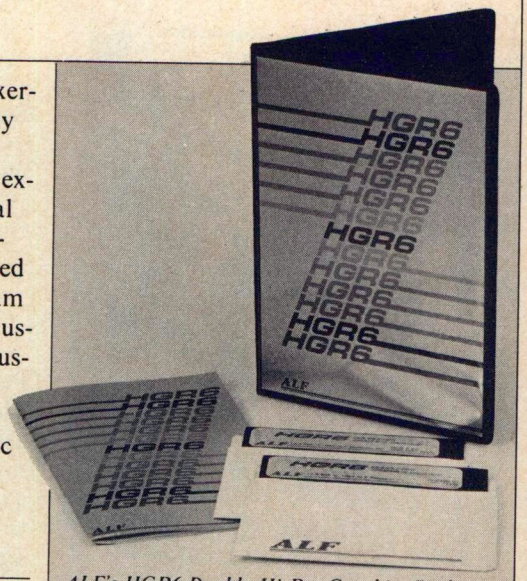

ALF's HGR6 Double-Hi-Res Graphics Package is now compatible with ProDOS.

(List Price: $49.95; ALF will replace old version at no charge)

Requires: Apple IIe

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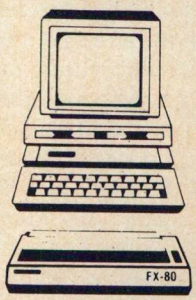

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PRODUCT NEWS

for the Apple IIc in a version that features easy-to-use file-card menus. This program offers users a year-round planning tool that enables them to evaluate the effects of financial decisions and so reduce future federal income taxes.

Also available in an Apple IIc version are Professional Tax Planner and Estate Tax Planner. *(List Price: $99, Personal Tax Planner; $350, Professional Tax Planner; $750, Estate Tax Planner)*

Requires: Apple IIc
Aardvark/McGraw-Hill
1020 North Broadway
Milwaukee, WI 53202
(414) 289-9988

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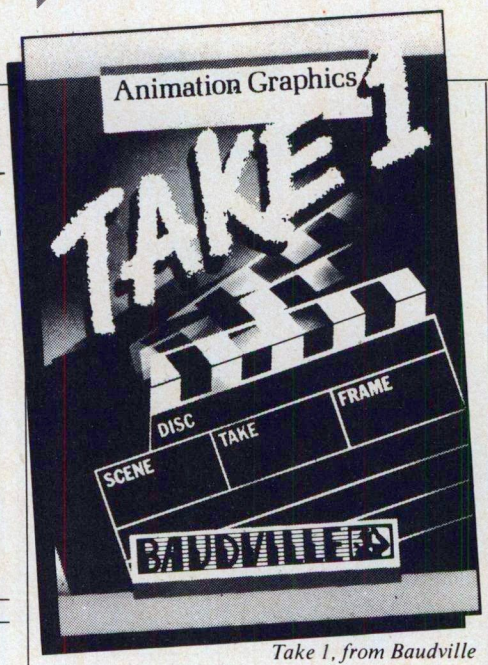

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Requires: Apple II, II Plus, IIe, or IIc; 64K RAM
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1001 Medical Park Drive, S.E.
Grand Rapids, MI 49506
(616) 957-3036

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Personal Banker
This new product from MicroLab aids users in the performance of household financial chores. Personal Banker keeps a checkbook in order, lists bills, keeps track of deductible expenses, maintains a current net worth statement, and prints checks. *(List Price: $75)*

Requires: Apple II, II Plus, IIe, or IIc; 48K RAM; one disk drive
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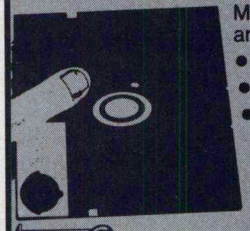

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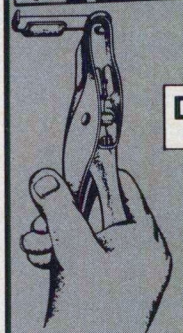

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Koala Technologies' Graphics Exhibitor combines with the KoalaPad to create high-resolution drawings.

Graphics Exhibitor

Combined with the KoalaPad touch tablet and KoalaPainter design software, Graphics Exhibitor lets Apple II users print out high-resolution drawings with Apple's new Scribe printer. In addition, the Graphics Exhibitor lets users print graphic hard copy and select 6 of 16 colors or 16 shades of gray, depending on the printer.

Users draw images on the screen by touching a stylus or finger to the KoalaPad; these pictures are stored on disk for later retrieval.

Sections are "cut" from these retrieved drawings for immediate printout, stored separately for later use in a slide show, or saved on a "clipboard" for later "pasting" into an assemblage of images.

The Graphics Exhibitor system also allows single-line text labels to be added to compositions in a wide selection of type fonts and styles. *(List Price: $39.95)*

Requires: Apple II, II Plus, IIe, or IIc; 48K RAM; one disk drive; KoalaPad; KoalaPainter; printer

Koala Technologies Corporation
3100 Patrick Henry Drive
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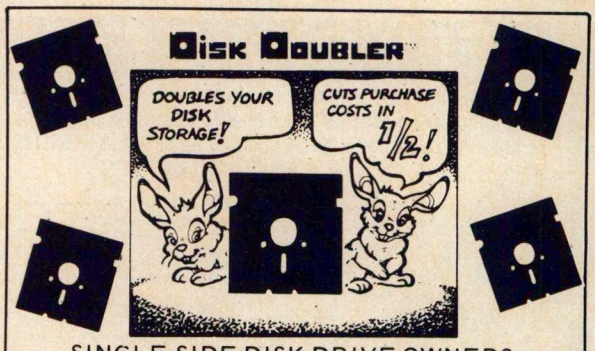

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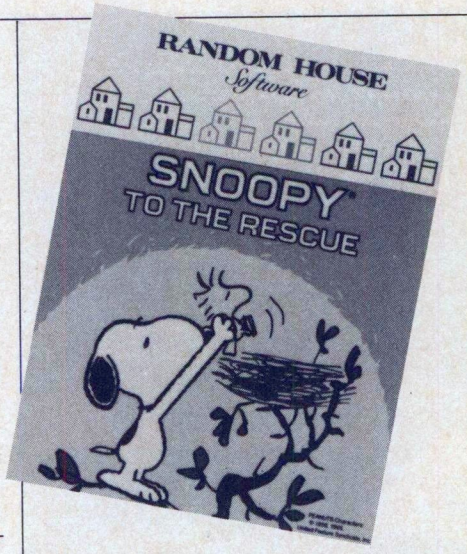

Peanuts Home-Computer Software, from Random House

Peanuts Home-Computer Software
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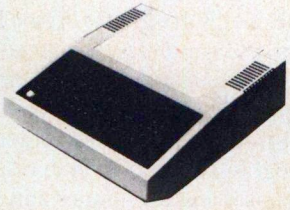

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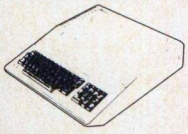

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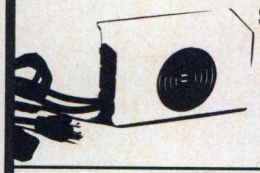

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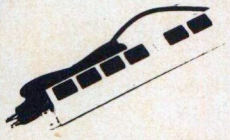

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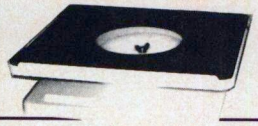

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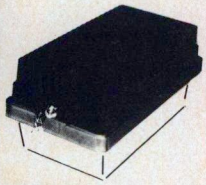

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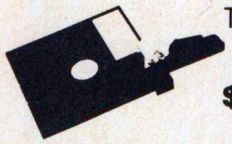

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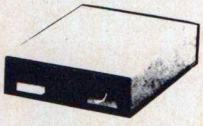

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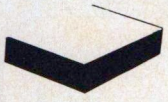

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full-duplex:
the software

Duplex, Full - A method of operating communications so that each end can both transmit and receive.

full-duplex: the software - An innovation in integrated communications software for the *Apple IIe™ and IIc* computers running under *ProDOS™*.

full-duplex is just that; two-way communications for your *Apple IIe* or *IIc*. **full-duplex** is an intelligent terminal package, an intelligent phone answering system with password protection, and a telephone data base. **the terminal** allows you to "talk" to other computers as well as send and receive disk files. **the answering system** provides the ability to have other computers call yours; displaying messages you specify and allowing the caller to leave you a message that you can read later. **the answering system** will also display the directory of the diskette and give access to the files stored there to callers who know the password you've created. **the directory** gives you a place to store the names and phone numbers you need —**the directory** will even dial those numbers for you. And best of all **full-duplex** runs under *ProDOS* on either the *Apple IIe or Apple IIc* giving you access to files created with *AppleWorks.*™

SUN DATA software

full-duplex is just one of four communication packages available from Sun Data Software. Call or write for more information.

Sun Data Software
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Logan, Utah 84321
(801) 752-7631
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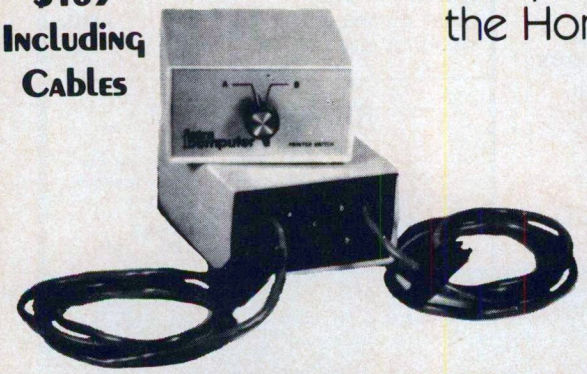

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CIRCLE 186 ON READER SERVICE CARD

PRODUCT NEWS

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Requires: Apple IIc
Sunburst Communications, Inc.
Pleasantville, NY 10570
(914) 769-5030
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Simply Perfect
Simply Perfect is an integrated software package that works on both the Apple IIc and the Apple IIe with extended 80-column card. The program integrates a word processor and spelling checker with a calculating database and built-in report generator that can have 16 formula fields. *(List Price: $189.95)*
Requires: Apple IIc or Apple IIe with extended 80-column card
LJK, Inc.
7852 Big Bend Blvd.
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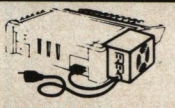

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PRODUCT NEWS

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All six programs support printing, and menus allow you to change data, change options, or move from one program to another. *(List Price: $34.95)*
Requires: Apple II, II Plus, IIe, IIc, or III in emulation mode; 48K RAM; one disk drive; printer
Core Concepts
P.O. Box 24157
Tempe, AZ 85252
(602) 968-3756
CIRCLE 533 ON READER SERVICE CARD

Graphics Magician Picture Painter
This graphics program, which enables computers to create double-high-resolution graphics, is now available in a version for Apple II computers equipped with 128K RAM. The high-resolution picture/object builder permits storage of hundreds of multicolored pictures on a single disk—the Graphics Magician Picture Painter storing the directions to redraw the picture, not the picture itself. You can create pictures by using lines; a fast, automatic color fill; "brushes"; and text.

The brushes range in size and shape from a small, precision brush to a large "airbrush," and you have 16 pure colors and 256 blended colors. The program works with joystick, mouse, paddles, touch tablet, or Apple Graphics Tablet. *(List Price: $49.95)*
Requires: Apple IIe with extended 80-column card, or IIc; 128K RAM
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830 4th Avenue
Geneva, IL 60134
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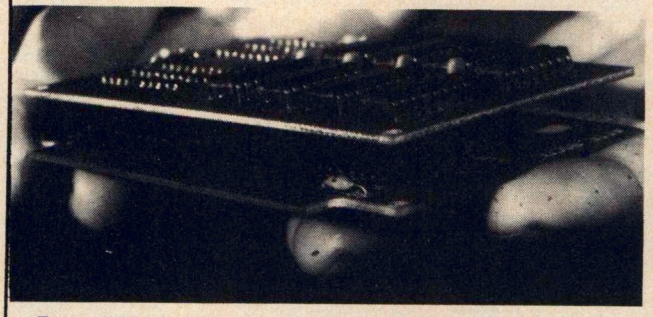

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Baedeker's Travelware: 4 programs that teach cultures, customs of France, Germany, Mexico, Japan; 28 situations per country challenge user to choose correct behavior. Amusing, engrossing, with graphics, sound effects, folk music. In English and target language (Japan,English only). $49.95 each (2 diskettes per country).

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Demo disc contains samples of 4 games or 4 countries.

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( )
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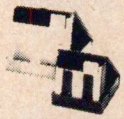

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CIRCLE 361 ON READER SERVICE CARD

PRODUCT NEWS

Financial Cookbook

Financial Cookbook provides answers to numerous personal financial questions. Through the program's 32 different "recipes" (formulas), users—regardless of financial expertise—can quickly figure out such things as returns on investments, effective tax shelters and IRAs, the effects of inflation on savings, mortgage and refinancing calculations, and tax rates. Each recipe asks users to enter variables, such as interest or inflation rates, and the program then makes calculations based on those numbers. An instruction manual provides in-depth explanation of financial and tax issues. *(List Price: $50)*

Requires: Apple II, II Plus, IIe, or IIc; 64K RAM; one disk drive

Electronic Arts
2755 Campus Drive
San Mateo, CA 94403
(415) 571-7171

CIRCLE 528 ON READER SERVICE CARD

Superbase

A powerful database-management and information-retrieval system for the Apple IIc, Superbase offers menu-driven operation, direct commands to the database, and a user-programmable interface for creating custom applications.

Three application packages developed under Superbase—Homebase 1, 2, and 3—are also available. These packages consist of home-application programs and a programmer's guide to Superbase. *(List Price: $169)*

Requires: Apple IIc

Precision Software (USA), Inc.
820 Second Avenue, Suite 1100
New York, NY 10017
(212) 490-1825

CIRCLE 538 ON READER SERVICE CARD

New MicroLab Business Products

First Base leads off three new products from MicroLab's business division. A simplified database manager that is compatible with Data Factory files, First Base offers search, sort, edit, and print functions. Other new MicroLab products are Multigraph, a graphics package that produces line, bar, and print graphs, and a new version of Mi-

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By now, you've probably heard or read about SAFEWARE℠ Insurance for microcomputers. But you may still wonder just what it protects, or whether it's really worth the investment. If you've never lost any part of your computer system or software, you probably don't yet realize the limitations of most standard insurance coverages. Or the agonies you could face in trying to recover even the simplest piece of peripheral equipment.

What do you mean it's not covered?!
Operating your computer system without SAFEWARE protection is fine as long as you don't have to worry about an accident or loss. But what if you came to your office one morning to find you'd been robbed? Or your home had been ransacked? Or that a pipe had burst and caused water damage? Or that your system, too, had fallen victim to a leading destroyer of micro-systems—a power surge? All events beyond your control. If something like this should happen to you, you're likely to find out the hard way just how limited your standard insurance policy's protection really is. And no matter how little or how much you have invested in your computer system, discovering that it's not covered can be an expensive lesson.

Now you can be sure
SAFEWARE was developed by an insurance professional who was shocked to learn that his very own personal computer was at risk. Can you imagine? What he discovered was that his homeowners insurance policy excluded coverage as soon as he began operating his first business program. Even his simplest spreadsheet voided coverage. Because most homeowners policies *won't cover any equipment used for business*, no matter how infrequently. Out of this need was born SAFEWARE. A simple, easy-to-understand coverage you can count on. Full replacement coverage of hardware, software and media, after a low $50 deductible.

With SAFEWARE there's no need for you to schedule equipment or software as you do with the "rider" type of policies. So your coverage can grow with your system, providing protection for its full value rather than for each individual item. This will be especially important to you if you're ever planning to buy additional equipment or software. Even just one peripheral.

What the editors are saying
Desktop Computing: . . . "Given the amount of money that business users spend on computer equipment . . . it's not too farfetched to say that an insurance policy may be the most important new accessory that you could add to your desktop computer system."
Computer Decisions: . . . "Your personal computer might not be safe at home. If it is not insured, then you're running the risk of losing the thousands of dollars you've invested . . ."
Personal Computing: . . . "Replacing hardware may be more of a problem than you thought it would be . . . That's why (a computer consultant) suggests that you get the computer insured."
Wall Street Journal: . . . "[SAFEWARE] introduces coverage that insures home computers regardless of use. The usual premium: about $75 a year."

An All-Risk, no risk offer
SAFEWARE is an *All-Risk* plan of insurance, which means that it covers *all* hardware, *all* purchased software, and *all* media. Your complete system is protected against theft, fire, accidental damage, even damage sustained while the computer is being transported in your car. SAFEWARE even covers damage caused by power surges . . . the leading destroyer of microcomputers. And, now, SAFEWARE is available on a *no risk* basis. If you are not completely satisfied with the protection afforded by SAFEWARE, you may return the contract for a full refund within the first 10 days after you've received it.

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Since it was first introduced in 1982, thousands of computer owners, like you, have said *"yes"* to the SAFEWARE offer. Owners of systems from the smallest portable micros to larger sophisticated business systems are finding that SAFEWARE offers the most affordable and complete security. And the simplest peace of mind available to ensure carefree computing.

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Columbus, OH 43202

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SAT (Harcourt Brace)	79,95	58.16
SAT (Krell)	299.95	252.96
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Maxell Disks	51.00	29.00
Ramcard (Microsoft)	99.95	75.96
Wico Analog Joystick	49.95	35.96
Wildcard 2	139.95	110.19
MISCELLANEOUS		
Chess 7.0 (Odesta)	69.95	50.76
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Joust	34.95	28.76
Locksmith 5.0	99.95	77.96
Phi Beta Filer	49.95	35.96
Pole Position	34.95	28.76
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East Setauket, N.Y. 11733
(516) 751-2535

CIRCLE 116 ON READER SERVICE CARD

PRODUCT NEWS

croLab's original database program, The Data Factory. *(List Price: $75, First Base alone; $300, Data Factory including First Base; $150, Multigraph)*
Requires: Apple II, II Plus, IIe, or IIc; 48K RAM; two disk drives; graphics-capable printer for Multigraph
MicroLab
2699 Skokie Valley Road
Highland Park, IL 60035
(312) 433-7550

CIRCLE 539 ON READER SERVICE CARD

New Versions of BPI's Business Software

Six of BPI Systems' business software packages—General Accounting, Accounts Receivable, Accounts Payable, Payroll, Inventory Control, and Budget and Analysis—are now available for the Apple IIc. BPI is developing computer-assisted learning aids for the first four of these programs. The company's Personal Series—Personal Investing, Personal Accounting, and Speed Reading also are scheduled to be available this year. *(List Price: $425, General Accounting, Accounts Receivable, Accounts Payable, Payroll, and Inventory Control; $195, Budget and Analysis)*
Requires: Apple IIc
BPI Systems, Inc.
3423 Guadalupe
Austin, TX 78705
(512) 454-2801

CIRCLE 540 ON READER SERVICE CARD

Easy Com Easy Go

A new version of Transend's series of terminal communications software, Easy Com Easy Go runs on the Apple IIc. Easy Com Easy Go provides an integrated full-function text editor, which allows users to create or modify text going to or coming from another computer or service. It has automatic log-on capabilities for use with information services such as CompuServe, The Source, and Dow Jones News/Retrieval. The program also provides a versatile file-transfer capability with a variety of error-checking protocols, including the industry standard XMODEM protocol. *(List Price: $129.95)*
Requires: Apple II Plus, IIe, or IIc; 64K RAM; one disk drive; serial interface; modem
Transend Corporation
2190 Paragon Drive
San Jose, CA 95131
(408) 946-7400

CIRCLE 806 ON READER SERVICE CARD

Security Software

Designed to protect data sent over local-area networks, this program works by encrypting the actual file data or program contained on a diskette. Unauthorized personnel can intercept the data but cannot access it without the valid password. Passwords are easily changed, and unlimited combinations are possible. Single users can also use Security to protect their data. *(List Price: $24.95 plus $1.50 for shipping; ten-day free trial, plus warranty, included)*
Requires: Apple II Plus or IIe; DOS 3.3
Software Specialties, Inc.
Box 329
Springboro, OH 45066
(513) 748-0471

CIRCLE 541 ON READER SERVICE CARD

Extend 80

With Extend 80, you can expand your Apple IIe's memory, using the standard 80-column card that came with your computer. Extend 80 plugs into the standard card piggyback style. It is completely compatible with all existing software—including Apple's new AppleWorks program—and supports double-high-resolution graphics. *(List Price: $129.95)*
Requires: Apple IIe
Caribbean Computer Sales, Inc.
221 East Osceola, Suite 110
Stuart, FL 33494
(305) 287-3336

CIRCLE 807 ON READER SERVICE CARD

Fact and Fiction Tool Kit

Fact and Fiction Tool Kit comprises two programs that are suitable for children aged eight and above. Story Maker enables children to write, illustrate, and print their own stories. They can draw in 16 colors by using a mouse or joystick, or they can produce illustrated

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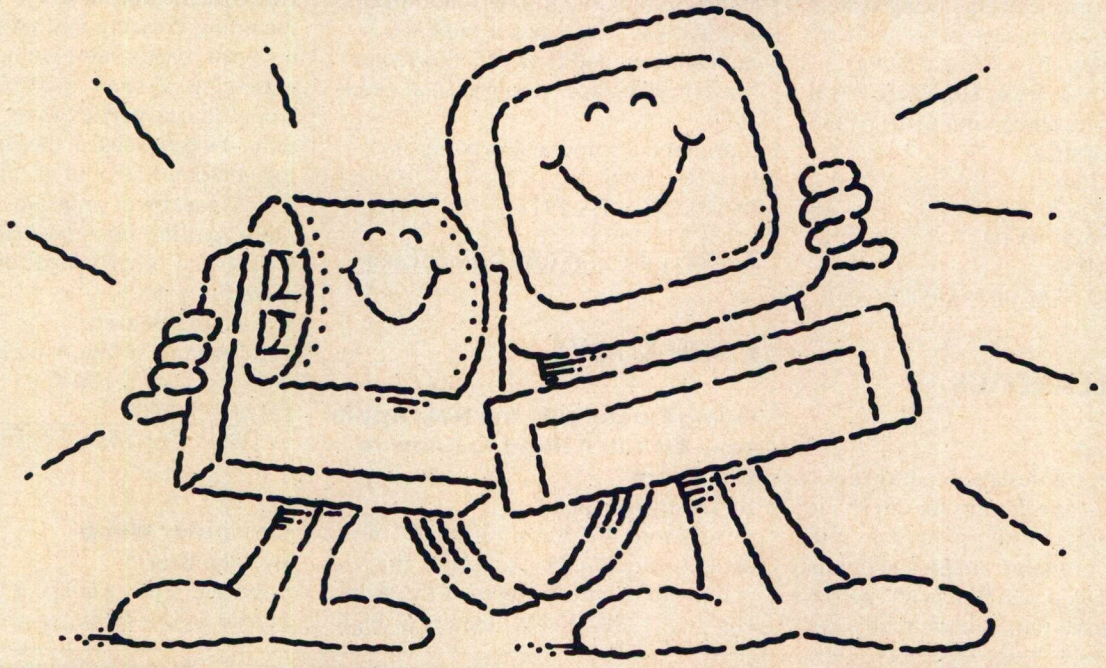

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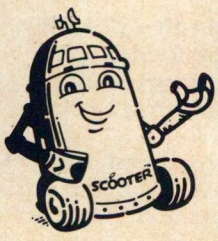

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City:_____ State:_____ Zip:_____

AP-0984

CIRCLE 173 ON READER SERVICE CARD

text by using more than 60 pictures and eight typefaces that the program provides. Secret Filer, the second program in the kit, is an electronic filing system that helps children sort, save, and edit their own files. *(List Price: $39.95)*

Requires: Apple IIe or IIc, 128K RAM, one disk drive, 80-column card, Apple Mouse or joystick

Scholastic, Inc.
730 Broadway
New York, NY 10003
(212) 505-3000

CIRCLE 542 ON READER SERVICE CARD

MISCELLANEOUS

Micro-Match

Micro-Match is designed to provide you with ready-made designs for interfacing microcomputers with peripherals, minicomputers, or mainframes. The product comprises two parts: Blueprints consists of two volumes that contain ready-to-use interface diagrams and step-by-step instructions for linking microcomputers and peripherals; Access Forum covers micro-to-mini and micro-to-mainframe applications. Users receive updates each quarter, and they can also request "custom interface" designs. *(List Price: $690)*

Command Computer Corporation
P.O. Box 5096
Philadelphia, PA 19111
(215) 745-5555

CIRCLE 543 ON READER SERVICE CARD

NEW BOOKS

Going Places with the New Apple IIc—All You'll Need to Know to Get There

By Danny Goodman

A foreword by Steve Wozniak introduces *Going Places . . .*, a book that explains the unique features of the Apple IIc—its 128K RAM memory, high-quality graphics, the forthcoming flat-panel display, and other technical specifications. This book presents a series of home and business applications, including creating and editing a letter or term paper, developing a budget, managing a stock portfolio, banking from home, participating in a computer-bulletin-board discussion, creating computer art and graphics with the new MousePaint program, computerizing a mailing list, and learning touch-typing and other educational subjects. *(List Price: $3.95)*

Simon and Schuster
1230 Avenue of the Americas
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(212) 245-6400

CIRCLE 805 ON READER SERVICE CARD

Computer Wimp

By John Bear

Subtitled *166 Things I wish I had known before I bought my first COM-*

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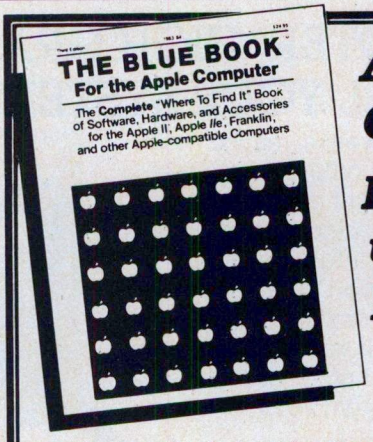
P.O. Box 139, Dept. 209
State College, PA 16804 (814) 238-8294

CIRCLE 144 ON READER SERVICE CARD



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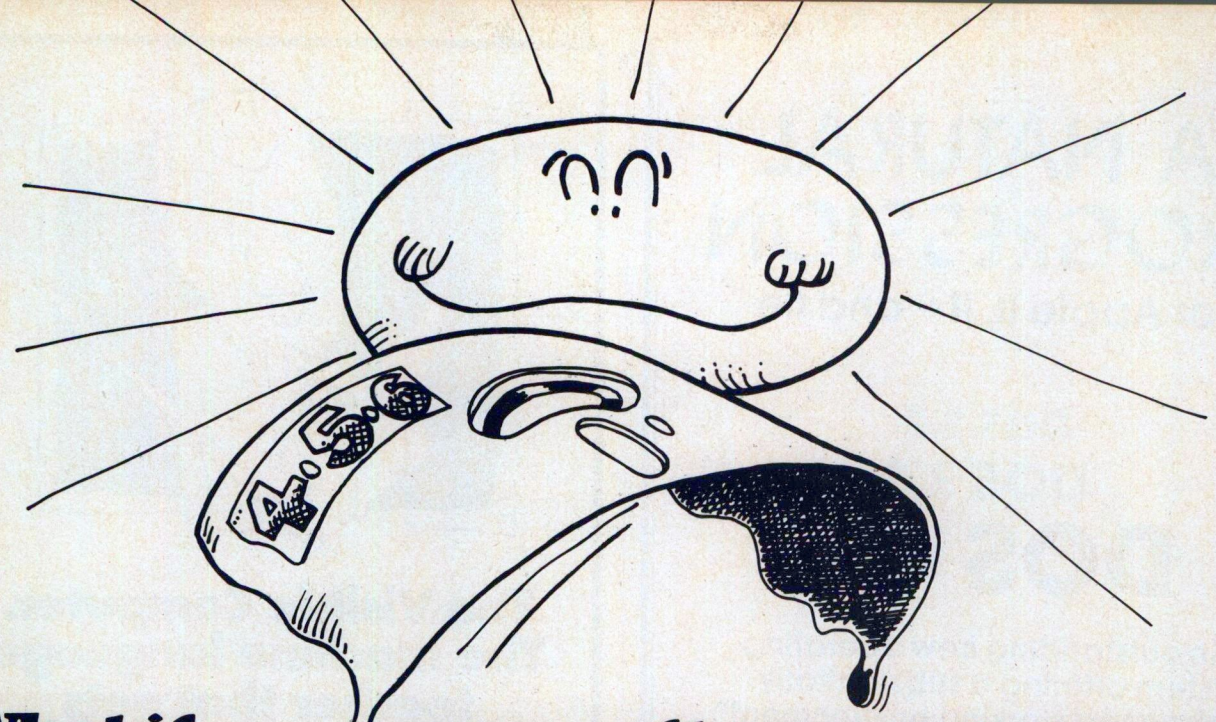
CIRCLE 360 ON READER SERVICE CARD



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This is the most widely used backup program for the Apple. Rated as "one of the best software buys of the year" by **InCider** magazine, its simple menu puts nearly every disk command at your fingertips. The manual, with more than 70 pages, describes protection schemes, and our **Backup Book**™ lists simple instructions for backing up over 300 popular programs. A new version is now available that is easier to use and more powerful than before. Best of all, Copy II Plus is still only **$39.95.**

NEW!

WildCard 2 (Apple][,][Plus, //e)

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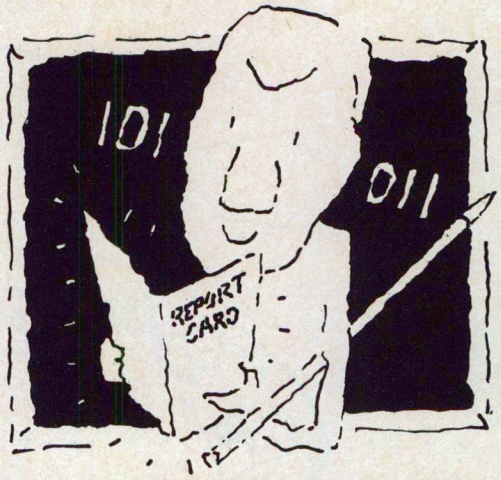

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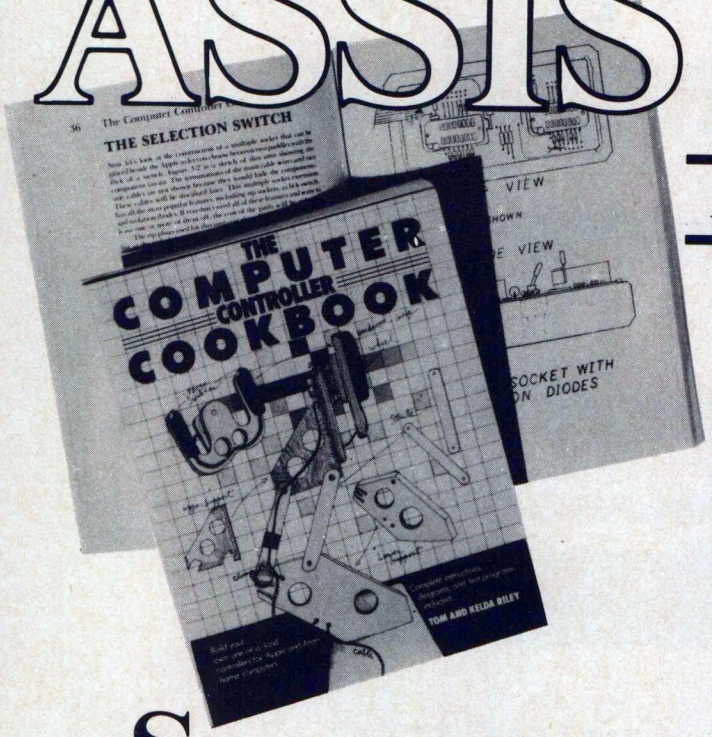

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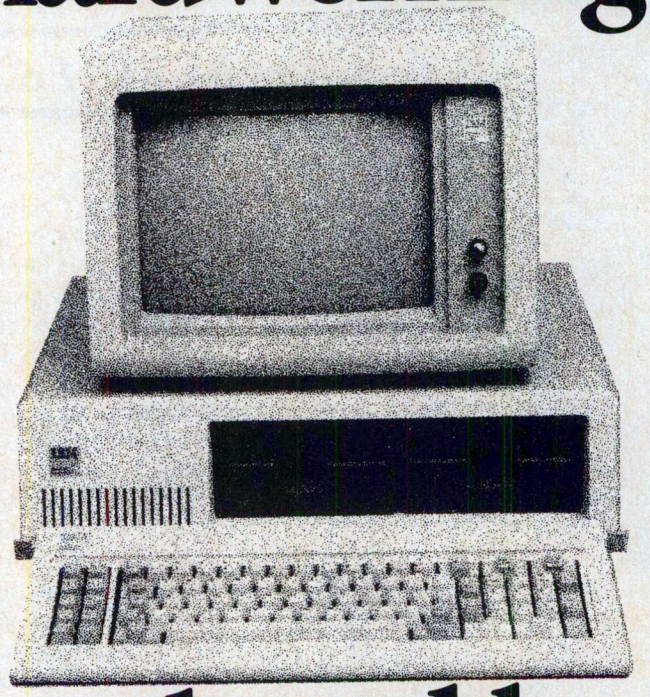

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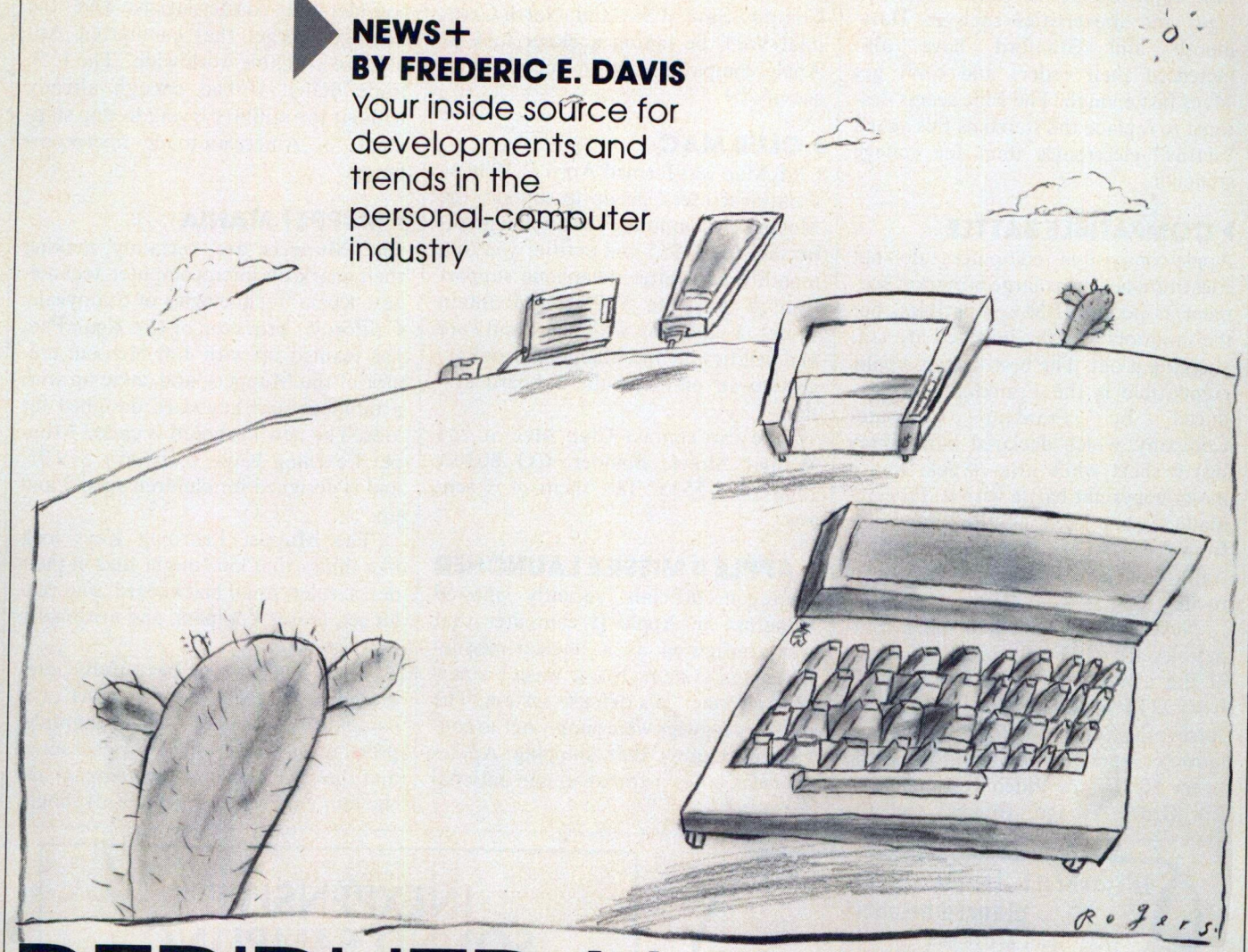

PERIPHERAL VISIONS

A lag in production of Apple's Imagewriter dot-matrix printers this summer ended up affecting sales of the Macintosh, since the Imagewriter was the only printer the Mac was designed to work with. Many people are suggesting that Apple should have made the Macintosh compatible with other brands of graphics-capable printers. I've heard talk that other printer manufacturers are thinking hard about making their printers "Imagewriter-compatible" to cash in on the demand.

An intriguing rumor about why the Imagewriter printers were in such short supply is making the rounds. It seems the hang-up was due to a shortage of the Intel 8085 microchip, a critical component of the Imagewriter's internal circuitry—interesting, considering that IBM owns a significant chunk of Intel. Hmmm . . .

Sales of the Apple IIc were also slowed this past summer by lack of available Apple peripherals such as the Monitor IIc, mouse, external disk drive, Scribe printer, Imagewriter, and various cables. Apple promises to increase availability of these products this fall, in time for the year-end buying season. By that time various third-party suppliers should also have competitive products ready for sale.

LETTER QUALITY FOR MAC

Although Apple is hurriedly working on making the Macintosh compatible with the Apple Daisy Wheel Printer, several other companies already offer ways to hook up daisy-wheel printers to the Macintosh. Two companies with a Macintosh letter-quality printer hookup are Applied Creative Technology of Dallas, Texas, which offers a hardware solution called the Printer Optimizer, and Assimilation Process, of Los Gatos, California, producer of a software solution called the Mac Daisywheel Connection. We'll be looking at these products in upcoming issues.

C COMPILER

Softworks Unlimited of Chicago, Illinois, recently announced a C compiler for the Macintosh. It allows you to develop applications that run up to 200 times faster than similar applications that use Microsoft's MS-BASIC for the Mac. The Softworks Unlimited C compiler works with Apple's new 68000 Assembler software and supports all of the Macintosh's 500 ROM calls. The C compiler works in a 128K Mac, a 512K Mac, or a Lisa 2. The C compiler should help accelerate the development of Macintosh software.

HUGE MAC ORDER

Apple Computer recently received an order for 13,000 Macintosh computers from the University of Texas, which is the largest single order for any product

LILLA ROGERS

that Apple has ever received. Other colleges and universities such as Dartmouth and Stanford have also increased their orders and can't get Macs fast enough. The Mac seems destined to replace the stereo as this year's "status" electronics item for college students.

▸ COMPATIBLE BATTLE

Apple-compatible computers do not constitute nearly as large a market segment as do the IBM-compatibles, but the imitators and the imitated are still slugging it out. The best-known Apple-compatible is the Franklin Ace, produced by Franklin Computer Company, which declared bankruptcy just a short while after Apple won a major copyright battle with it. Foreign-made clones such as the PineApple from Asia and the Wombat from Australia have also lost out in the courtroom.

Nevertheless, more and more compatibles are still being rolled out. Some of the newcomers include the Eve II from CTI of East Rutherford, New Jersey; the Sekon 64z from Sekon Systems of Santa Monica, California; the Laser 3000 from Video Technology of Elk Grove Village, Illinois; and the Alex 500A portable computer from Comp-U-Save of Skyland, North Carolina. We'll be taking a closer look at Apple compatibles in an upcoming issue of *A+*.

▸ CLUB MAC

Club Mac was formed April 1, 1984 as a national users' group to support the Macintosh computer. The annual membership fee is $35 and entitles you to a monthly newsletter, telephone support from 8 A.M. to 5 P.M. (Mountain Time), a club disk with some software and utilities for the Macintosh, and access to an on-line bulletin-board system.

You can contact Club Mac at 735 Walnut Street, Boulder, CO 80302; (303) 449-5533. Tell them *A+* sent you.

▸ APPLE II MISSILE LAUNCHER

Pentagon officials recently showed Congress an Apple II computer that was configured as a nuclear-missile-launching system. No, it wasn't a new part of America's defense system. The military bigwigs were simply out to convince Congress that shipping Apples overseas poses a threat to our national security.

This situation must cause Steve Jobs considerable consternation. Did the Pentagon forget that counterfeit Apples are available worldwide? The U.S. trade deficit is bad enough already without the military trying to stop shipments of American-made microcomputers.

▸ MUPPET MANIA

The Muppets are certainly making their mark on microcomputer technology. Koala Technologies of Sunnyvale, California, producer of the KoalaPad, has teamed up with Jim Henson, creator of the Muppets, and come up with a fabulous new keyboard designed for kids. The new keyboard is called Muppet Learning Keys, costs only $79.95, and is designed for children aged 3 and up.

The Muppet Learning Keys look like things that kids might find in their desks: ruler, small blackboard, watercolor set, eraser, compass, and arithmetic exercise book.

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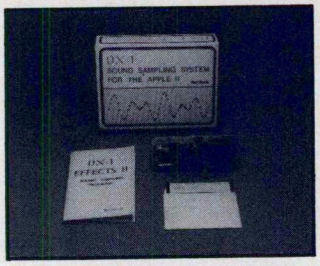

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To further boost the Muppet's move to microcomputers, Jim Henson Associates, Joyce Hakansson Associates, and publishing giant Simon and Schuster have teamed up to produce educational software for kids. The new software will be sold under the Muppet Institute of Technology label and includes such titles as Kermit's Electronic Story Maker and The Great Gonzo in Word Rider.

▸ 512K MAC ON THE WAY

Rumor has it that Apple will be able to make good on its promise of a Macintosh with an expanded 512K bytes of RAM. Apple has reportedly obtained more than two million of the necessary 256K RAM chips at a cost of more than $20 each. If this information is correct, you may have to spend around $1000 to upgrade your Mac to 512K, since 16 of the precious chips are necessary for the upgrade.

Apple has already started to make the 512K Macs available to Apple-certified software and hardware developers. In fact, a good number of developers have been using 512K Macs for several months to work on new, more powerful Macintosh products.

▸ HABA DABA DOO!

Chaz Haba, CEO of Haba Systems, Van Nuys, California, claims that his company sold more than a million dollars worth of its Habadex program (see our review of the Apple III version in this issue of *A+*) for the Macintosh during the first month the program was offered. The $200 package is a combination appointment calendar and Rolodex. If Haba's sales claims prove to be accurate, they certainly bode well for Macintosh software developers.

▸ SONY, APPLE ALLIANCE

Apple Computer and Sony have signed an agreement that gives Sony the right to all of Apple's hard-disk technology under a special licensing agreement. Under the agreement, Sony will supply Apple with hard-disk drives, beginning in 1985. Sony is already supplying Apple with 3½-inch floppy drives for the Macintosh and Lisa and may supply hard-disk drives for these machines as well.

This alliance should be advantageous to Apple, since Sony is the most highly regarded Japanese electronics company. The agreement opens the door to future cooperation on other R&D projects—Sony's expertise in electrical engineering and consumer electronics could be a great resource for Apple.

Sony is reportedly strong in the area of CMOS technology, which is important for the development of lap-size and portable computers, such as the Apple IIc. Rumors are starting to circulate that Apple is thinking of cooking up a lap-size Macintosh, and if these rumors are true, Sony's CMOS technology could really come in handy.

▸ IIe SALES RECORD

When the IIc was introduced earlier this year, various market-watchers predicted that sales of the popular IIc would cut heavily into sales of the IIe. Sales of the IIe have remained strong, however, and the market-research firm InfoCorp has therefore revised its estimate of how many Apple II-series computers will be sold in 1984. InfoCorp previously predicted that 750,000 Apple IIs would be sold this year. Since sales of the IIe are stronger than expected in the education, business, and scientific marketplaces, however, InfoCorp now predicts that 900,000 Apple II computers will sell by the end of the year. This figure would represent a new sales record for the Apple II. ✚

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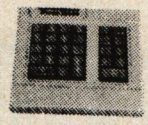

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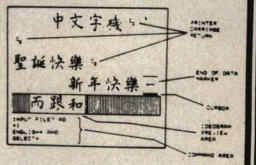

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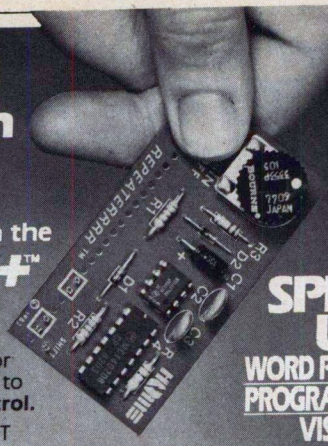

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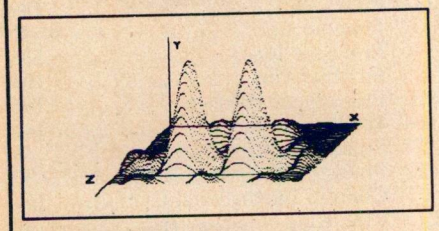

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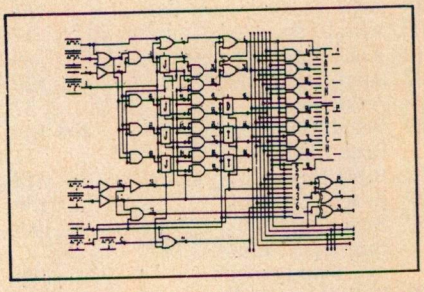

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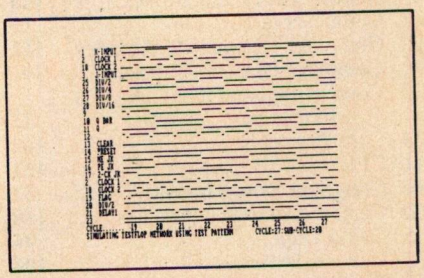

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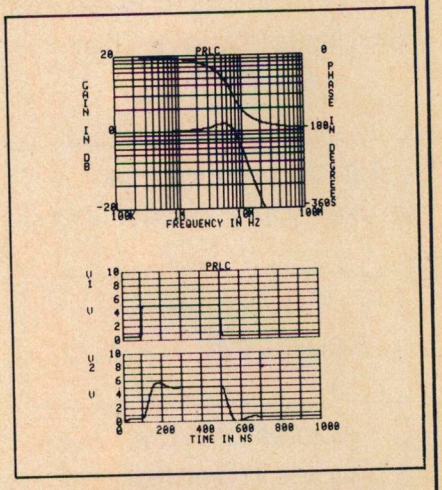

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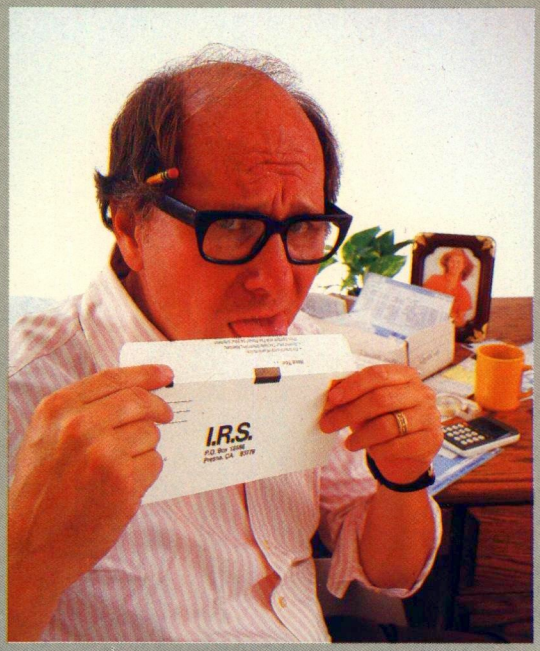

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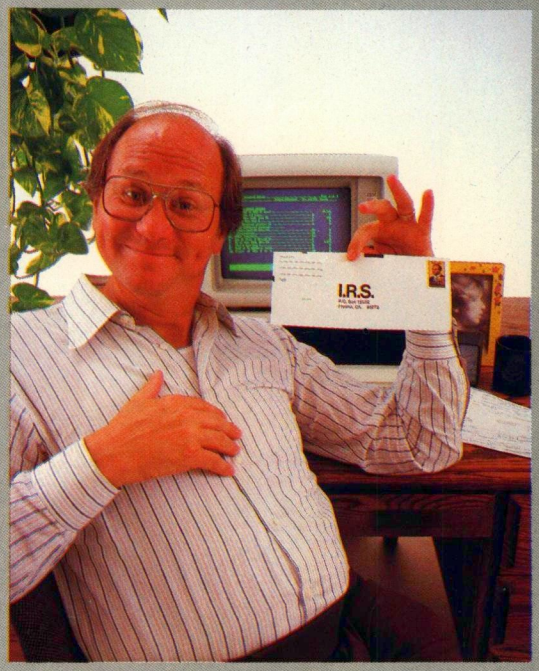

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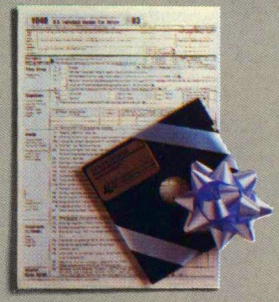

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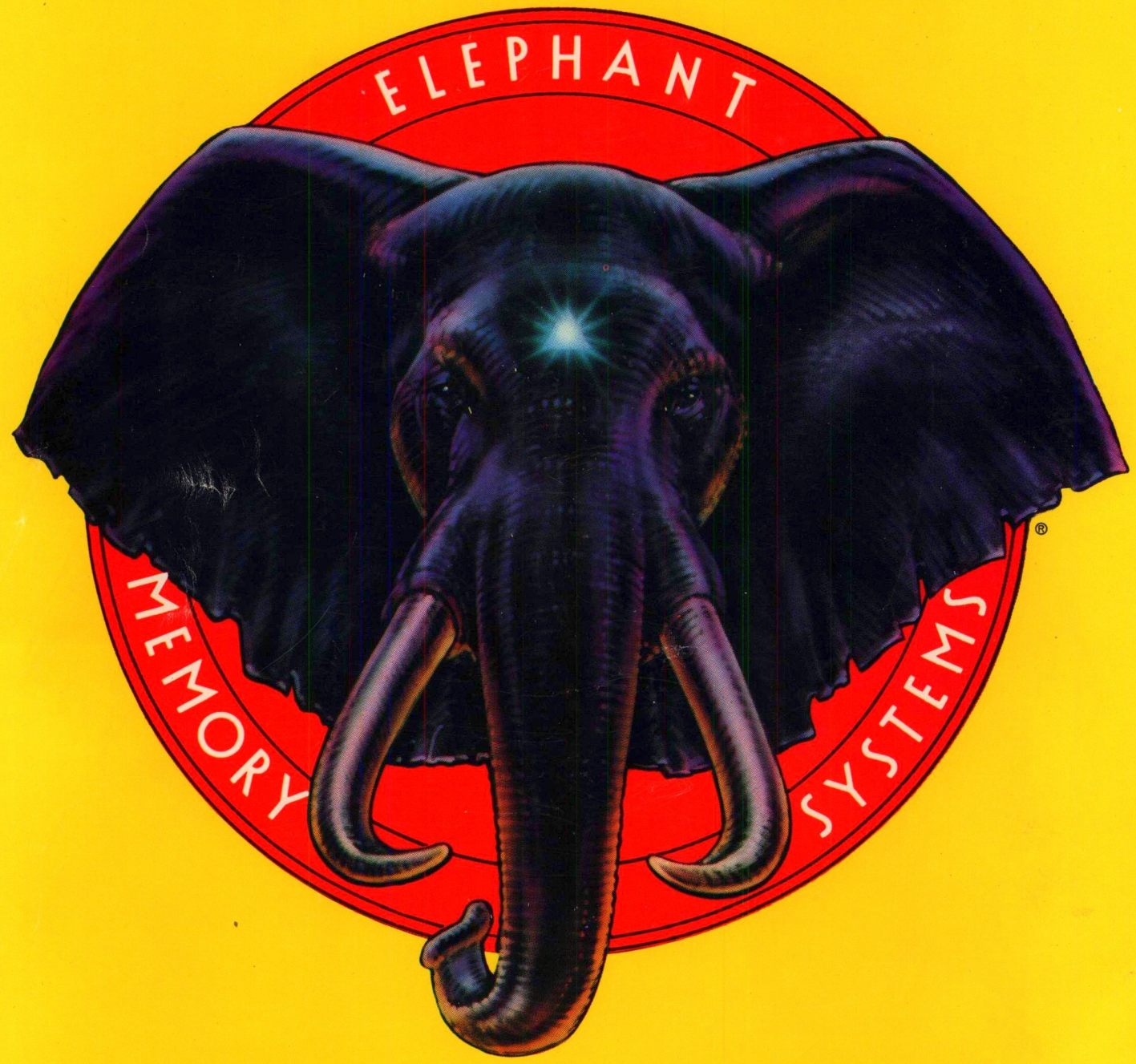

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Please indicate which of the following microcomputers you currently own and/or plan to buy in the next 12 months.

	1 Own	2 Plan to Buy
Apple II	A	I
Apple IIc	B	J
Apple *IIe*	C	K
Apple III	D	L
Lisa	E	M
Macintosh	F	N
Other (specify)	G	O
None	H	P

3 For what, if any, business application(s) do you use the microcomputer you currently own?_____

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